2003

ACTUARIAL REPORT

ON THE

PENSION PLAN FOR THE PUBLIC SERVICE OF CANADA

AS AT 31 MARCH 2002

Office of the Superintendent of Financial Institutions Canada

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9 September 2003

The Honourable Lucienne Robillard, P.C., M.P.
President of the Treasury Board
Ottawa, Canada
K1A 0R5

Dear Minister:

Pursuant to section 6 of the *Public Pensions Reporting Act*, I am pleased to submit the report on the actuarial review as at 31 March 2002 of the Public Service pension plan. This plan is defined by Parts I, III, and IV of the *Public Service Superannuation Act* and by the *Pension Benefits Division Act* and the *Special Retirement Arrangements Act*.

Yours sincerely,

Jean-Claude Ménard

Jean-Claude Ménard, F.S.A., F.C.I.A.
Chief Actuary
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I. Executive Summary

A. Introduction

The previous actuarial report on the Public Service pension plan made as at 31 March 1999 was in respect of the plan defined by Parts I, III, and IV of the *Public Service Superannuation Act* (PSSA) and by the *Pension Benefits Division Act*.

Beginning with this valuation, the Public Service pension plan is considered to also include the Public Service-related benefits defined by the *Special Retirement Arrangements Act*, which were last valued in the actuarial report on the Retirement Compensation Arrangements (RCA) Account as at 31 December 1998.

B. Purpose of Actuarial Report

This actuarial report on the Public Service pension plan was made as at 31 March 2002 pursuant to the *Public Pensions Reporting Act* (PPRA). The date of the next periodic review is 31 March 2005.

In accordance with accepted actuarial practice, the main purpose of this actuarial report is to show realistic estimates of:

- the balance sheets of the pension plan as at the valuation date, i.e. its assets, its liabilities, and the actuarial surpluses or actuarial deficits as at that date;
- the annual amount to amortize over a period of years any going-concern actuarial deficit revealed as at the valuation date, and
- the projected costs of the plan for each of the next three plan years[1] following the valuation date.

C. Main Findings

- As at 31 March 2002 the PSSA portion of the plan had an actuarial surplus of $9,093.2 million in the Superannuation Account and an actuarial deficit of $219.4 million in the Pension Fund. These amounts are 12.6% and 4.8% of the corresponding liabilities, respectively.
- The Superannuation Account actuarial surplus exceeds 10% of the corresponding liabilities by $1,898.6 million, which amount must be withdrawn from the Superannuation Account in accordance with the legislation. If the $219.4 million Pension Fund actuarial deficit were to be amortized in 11[2] equal annual instalments beginning on 31 March 2004, the annual amount would be $30.3 million.

[1] Any reference to a given *plan year* in this report should be taken as the 12-month period ending 31 March of the given year.

[2] The expected average remaining service life (EARSL) for the active contributors is 11 years.

- The PSSA normal cost for the 2003 plan year[1] is 17.25% of pensionable payroll[2], that is $2,311.7 million, and is estimated to change marginally to 17.20% and 17.28% for the following two plan years.

D. RCA Results

- As at 31 March 2002 the RCA portion of the plan had actuarial deficits of $485.2 million and $70.1 million in RCA No. 1 and RCA No. 2, respectively.
- The RCA No. 1 actuarial deficit of $485.2 million could be amortized, after taking into consideration the special payment of $77.7 million made at the end of plan year 2003, in 11 equal annual instalments of $48.3 million beginning on 31 March 2004. The RCA No. 2 actuarial deficit of $70.1 million could be amortized, after taking into consideration the special payment of $4.7 million made at the end of plan year 2003, in 11 equal annual instalments of $7.7 million beginning on 31 March 2004.
- The RCA No. 1 normal cost for the 2003 plan year is 0.59% of pensionable payroll, that is $78.4 million, and is estimated to be 0.56% and 0.55% of pensionable payroll for each of the following two plan years respectively. The RCA No. 2 normal cost is zero because there are no further benefit accruals.

[1] Any reference to a given *plan year* in this report should be taken as the 12-month period ending 31 March of the given year.

[2] Pensionable payroll means the aggregate of pensionable earnings of all contributors with less than 35 years of service, except for members on leave without pay.

II. Financial Position of the Plan

A. PSSA Going-Concern Valuation Results

Beginning on 1 April 2000, employer and employee contributions to the *Public Service Superannuation Act* (PSSA) portion of the plan were no longer credited to the Public Service Superannuation Account. Rather, they were deposited in the newly created Public Service Pension Fund to be invested in the financial markets. The valuation results of this section show the financial position for both PSSA funding vehicles as at 31 March 2002. A projection of the runoff of the Superannuation Account is shown in Appendix 10.

The following balance sheet was prepared using the assets described in Appendix 4, the data described in Appendix 5, the methodology described in Appendix 6, and the assumptions described in Appendix 7.

Table 1 Going-Concern Balance Sheet
as at 31 March 2002 ($ millions)

	Superannuation Account	Pension Fund
Actuarial Value of Assets		
Actuarial value of assets	80,550.4	4,275.3
Arrears contributions[1]		
· Members	269.3	12.6
· Government	219.6	28.1
Total actuarial value of assets	81,039.3	4,316.0
Actuarial Liabilities		
Active contributors	31,718.3	4,275.1
Non-active contributors	82.2	5.3
Retirement pensioners (including deferreds)	31,703.2	152.3
Disability pensioners	1,630.5	12.3
Surviving dependants	4,297.8	4.1
Outstanding payments[2]	1,773.4	86.3
Administrative expenses	740.7	-
Total actuarial liabilities	71,946.1	4,535.4
Actuarial surplus/(deficit)	**9,093.2**	**(219.4)**

[1] Present value of contributions to be made in respect of prior service and leave without pay elections made on or before 31 March 2002.
[2] Primarily transfers in respect of entities no longer participating in the plan.

B. Reconciliation of PSSA Going-Concern Valuation Results

This section reconciles each financial position shown in this going-concern valuation with the corresponding item of the previous valuation. The items shown in the following table are explained afterward.

Table 2 Reconciliation of Financial Position
($ millions)

	Superannuation Account	Pension Fund
As at 31 March 1999	13,027.7	-
Data corrections	(279.1)	-
Expected interest on initial actuarial surplus	3,777.8	-
Cost/contributions difference	(193.2)	44.7
Actuarial surplus withdrawals	(8,811.2)	-
Experience gains and losses	(963.2)	(451.6)
Unrecognized investment losses	-	232.7
Changes in assumptions and methodology	2,534.4	(22.6)
Adjustment for extra year of service	-	(22.6)
As at 31 March 2002	9,093.2	(219.4)

1. Data Corrections

The correction of data (such as status and pension amounts) upon which the 1999 report was based resulted in a decrease in the actuarial surplus of $279.1 million.

2. Expected Interest on Initial Actuarial Surplus

The expected interest to 31 March 2002 on the corrected actuarial surplus of $12,748.6 million as at 31 March 1999 amounted to $3,777.8 million, based on the Account yields projected in the previous report for the three-year intervaluation period.

3. Cost/Contributions Difference

A decrease in the Account actuarial surplus of $193.2 million resulted mainly from prior service and leave without pay elections, for which the government contribution rate is less than the government normal cost rate. An increase in the Fund actuarial surplus of $44.7 million resulted from the actual government contributions in plan years 2001 and 2002 being more than the government portion of the normal cost shown in the cost certificate of the previous report. These amounts include interest accumulation on the differences to 31 March 2002.

4. Actuarial Surplus Withdrawals

Legislative provisions grant authority to debit some actuarial surplus from the

Superannuation Account. A withdrawal of $8,100 million on 31 March 2001 decreased the surplus by $8,811.2 million after taking interest into account.

5. Unrecognized Investment Losses

An actuarial asset valuation method minimizes the impact of short-term fluctuations in the market value of assets was used (see Appendix 6), causing the market value of the Pension Fund assets to be $232.7 million more than their market value.

6. Experience Gains and Losses

Since the previous valuation, experience losses have decreased the Superannuation Account actuarial surplus by $963.2 million (including one year of interest to bring forward to 31 March 2002). Since its creation, the Pension Fund has suffered $451.6 million (including one year of interest to bring forward to 31 March 2002) in experience losses. The main items (in $ millions) are described in the following table.

	Superannuation Account	Pension Fund
Demographic assumptions (i)	(125.3)	(8.3)
Pension indexation	(106.4)	-
YMPE[1] increases	(106.3)	(8.7)
Salary increases (ii)	(960.8)	(78.9)
Investment earnings (iii)	161.5	(350.4)
Administrative expenses	(22.0)	-
Miscellaneous	196.1	(5.2)
Net experience losses	(963.2)	(451.6)

(i) The net impact of the demographic experience such as mortality, pensionable retirement and other elements decreased the Account actuarial surplus by $125.3 million and the Fund actuarial surplus by $8.3 million.

(ii) This item includes both general salary increases and seniority and promotional increases. Increases greater than expected decreased the Account actuarial surplus by $960.8 million and the Fund actuarial surplus by $78.9 million.

(iii) The rates of interest credited to the Account exceeded the corresponding projected Account yields in the previous valuation, which resulted in an experience gain of $161.5 million. Financial markets went through difficult times in 2001 and 2002. The Fund rates of return on a market value basis, using the dollar-weighted approach, were significantly lower than the projected annual yields of 7.25% in the previous valuation. Consequently investment earnings were $350.4 million less than expected.

7. Revision of Actuarial Assumptions

Actuarial assumptions were revised based on economic trends and demographic experience as described in Appendix 7. The impact of these revisions on the actuarial

[1] C/QPP Year's Maximum Pensionable Earnings.

surplus/(deficit) was determined as at 31 March 2001 and brought forward with one year's interest. The figures (in $ millions) are as follows.

Assumption	Superannuation Account	Pension Fund
Withdrawals	(116.8)	(9.5)
Pensionable retirements	260.4	17.3
Pensionable disabilities	5.5	1.6
Mortality improvement factors	264.9	3.4
Seniority and promotional	(381.2)	(41.4)
Economic salary increases	1,814.9	143.1
YMPE / MPE[1] increases	(349.4)	(25.0)
Pension indexation	3,631.7	105.4
Interest rate	(2,408.9)	(217.4)
Administrative expenses	(186.7)	-
Net impact of revisions	2,534.4	(22.6)

The net impact of the revision of the assumptions is mainly the result of the changes in economic assumptions. As described in Appendix 7, all economic assumptions were revised, with the most important being as follows:

- ultimate level of inflation lowered from 3.0% to 2.7%;
- ultimate increase in average earnings lowered from 4.0% to 3.6%;
- ultimate yield on the Account lowered from 6.0% to 5.7%; and
- ultimate rate of return on the Fund lowered from 7.25% to 7.0%.

C. PSSA Solvency Valuation Results

For the first time, a valuation was conducted on a solvency basis. A solvency liability attempts to measure the value of the benefits on a plan termination basis. A comparison of

[1] Pensionable earnings in excess of maximum discussed in Appendix 3.

the solvency assets with the solvency liabilities measures the degree of funding.

The plan being sponsored by the government, the plan legislation is silent on the benefits payable upon plan termination. For solvency valuation purposes, all members are assumed to be entitled to the benefits as if they terminated employment. The following results are shown for illustration only.

The following solvency balance sheet for the PSSA portion of the plan was prepared using the data described in Appendix 5 and the assets, the methodology and the assumptions described in Appendix 9.

Table 3 Solvency Balance Sheet
as at 31 March 2002 ($ millions)

	Superannuation Account	Pension Fund
Actuarial Value of Assets		
Market value[1] of assets	95,430.6	4,042.6
Arrears contributions[2]	301.4	12.6
Total actuarial value of assets	95,732.0	4,055.2
Actuarial Liabilities		
Active contributors	30,973.6	3,901.6
Non-active contributors	91.7	6.2
Retirement pensioners (including deferreds)	35,139.6	170.3
Disability pensioners	1,807.1	13.7
Surviving dependants	4,747.2	4.6
Outstanding payments	1,773.4	86.3
Termination expenses	88.0	4.8
Total actuarial liabilities	74,620.6	4,187.4
Solvency excess/(actuarial deficit)	21,111.4	(132.2)
Solvency ratio	128%	97%

D. PSSA Cost Certificate

The normal costs, assets and liabilities were computed for the PSSA portion of the plan using the assets described in Appendix 4, the data described in Appendix 5, the methodology described in Appendix 6, and the assumptions described in Appendix 7.

1 The imputed market value of the notional Superannuation Account assets was calculated by discounting future cash flows using the 31 March 2002 yields on Government of Canada bonds of corresponding durations. The market value of the Pension Fund assets as at 31 March 2002 was used.

2 Includes only the present value of member contributions to be made in respect of prior service and leave without pay elections made on or before 31 March 2002.

Emerging experience, differing from the corresponding assumptions, will result in gains or losses to be revealed in subsequent reports.

1. Normal Costs

The estimated value of the benefits that will accrue on behalf of the contributors and the estimated administrative expenses to be charged to the Fund for plan year 2003 is 17.25% of pensionable payroll. The following table shows the details of the normal cost for plan year 2003.

Table 4 Normal Cost for Plan Year 2003
($ millions)

Total normal cost	2,311.7
Member required contributions	664.2
Government normal cost	1,647.5
Expected pensionable payroll	13,402.7
Total normal cost as % of expected pensionable payroll	17.25%
Ratio of government to member contributions	2.48

The following table reconciles the PSSA normal cost of this valuation with the corresponding item in the previous valuation.

Table 5 Reconciliation of PSSA Normal Cost
(% of pensionable payroll)

For plan year 2000	17.63
Expected normal cost change[1]	(0.13)
Change in data composition	(0.16)
Change in pensionable payroll	(0.15)
Changes in assumptions	0.05
Minor items	0.01
For plan year 2003	17.25

As Table 5 shows, the net impact of all changes in assumptions was to increase the normal cost by a marginal 0.05% of pensionable payroll. The two largest individual items were an increase of 0.36% due to a strengthening of the seniority and promotional salary increase assumption and a decrease of 0.25% due to changes in the economic assumptions.

[1] The normal cost for 2000 reflected the projected yields on the Account, which were on average lower than the projected Pension Fund yields used to determine the normal costs for plan year 2001 onward. The difference in the projected yields caused the expected normal cost change to be negative rather than positive.

2. Projection of Normal Costs

The following PSSA normal costs are expressed as a dollar amount as well as a percentage of the projected pensionable payroll in each given plan year.

Plan Year	Percentage	$ Millions
2003	17.25	2,311.7
2004	17.20	2,458.5
2005	17.28	2,620.0
2006	17.35	2,772.2
2007	17.40	2,901.3
2012	17.50	3,478.6
2017	17.63	4,278.2

3. Allocation of Normal Costs

The foregoing projected normal costs are borne jointly by the contributors and the government. The member contribution rates are known with certainty only to 31 December 2003; beginning in calendar year 2004, the member contribution rates can be set as necessary by the Treasury Board subject to limitations (see Appendix 2). For projection purposes, the current member contribution rates of 4% up to the Year's Maximum Pensionable Earnings (YMPE) and 7.5% of salary above the YMPE were used.

Plan Year	Government (%)	Member (%)	Ratio
2003	12.29	4.96	2.48
2004	12.22	4.98	2.45
2005	12.27	5.01	2.45

4. Administrative Expenses of the Fund

Based upon the assumptions described in Appendix 2, the Fund administrative expenses are estimated to be $2,810,000 for plan year 2003, increasing to $4,000,000 and $5,310,000 for plan years 2004 and 2005, respectively.

5. Contributions for Prior Service Elections and Leave Without Pay

Based upon the valuation data and the assumptions described in item B-8 of Appendix 7, member and government contributions for prior service and leave without pay elections were estimated as follows.

Table 6 Estimated Contributions for Prior Service
($ millions)

Plan Year	Superannuation Account Member	Superannuation Account Government	Pension Fund Member	Pension Fund Government
2003	59.9	46.8	51.2	110.8
2004	50.9	40.4	51.9	110.8
2005	44.9	35.9	60.4	128.8

6. Special Payments

Based upon the Pension fund yields described in Appendix 7, the $219.4 million Pension Fund actuarial deficit could be amortized over the expected average remaining service lifetime of the contributors in 11 equal annual instalments of $30.3 million beginning on 31 March 2004.

E. Sensitivity to Variations in Key Assumptions

The results below measure the effect on the plan year 2003 normal cost and actuarial surplus for the PSSA if the key economic assumptions are varied one percentage point per annum from plan year 2003 onward.

	Normal Cost		Superannuation Account		Pension Fund	
Assumption(s) Varied	2003 (%)	Effect (%)	Actuarial Surplus ($ millions)	Effect ($ millions)	Actuarial Surplus ($ millions)	Effect ($ millions)
None (i.e. current basis)	17.25	None	9,093	None	(219)	None
Investment yield						
- if 1% higher	14.33	(2.92)	17,709	8,616	504	724
- if 1% lower	21.11	3.86	(1,735)	(10,828)	(1,169)	(950)
Inflation						
- if 1% higher	19.79	2.54	778	(8,315)	(834)	(614)
- if 1% lower	15.20	(2.05)	16,074	6,980	280	499
Salary increases						
- if 1% higher	18.87	1.62	6,925	(2,168)	(595)	(376)
- if 1% lower	15.76	(1.49)	11,124	2,031	126	345
Inflation and salaries						
- if both 1% higher	21.64	4.39	(1,722)	(10,816)	(1,260)	(1,041)
- if both 1% lower	13.88	(3.37)	17,847	8,754	586	805
Investment yield, inflation and salaries						
- if all 1% higher	17.80	0.55	9,007	(86)	(319)	(99)
- if all 1% lower	16.79	(0.45)	9,185	92	(138)	81

The foregoing estimates indicate the degree to which the PSSA valuation results depend on some of the key assumptions. The differences between the results above and those shown in the valuation can also serve as a basis for approximating the effect of other numerical variations one of the key assumptions, to the extent that such effects are indeed linear.

F. RCA Valuation Results

The previous valuation results for the RCA portion of the PSSA pension plan were shown in the report on the Retirement Compensation Arrangements Account as at 31 December 1998. Beginning with this valuation, the RCA valuation results are shown in the same report as the PSSA valuation results.

The normal costs, assets and going-concern liabilities presented in this section were computed using the assets, data, methodology and assumptions described in Appendix 8. The solvency liabilities were computed using the valuation methodology and assumptions described in Appendix 9.

1. Going-Concern Valuation Results

The following balance sheet was prepared using the assets, methodology, and actuarial assumptions described in Appendix 8.

Table 7 RCA Balance Sheet
as at 31 March 2002 ($ millions)

	RCA No. 1	RCA No. 2
Assets		
RCA Account	310.4	833.5
Refundable tax	196.7	831.1
Total assets	507.1	1,664.6
Actuarial liabilities		
Pensionable excess earnings		
• Active contributors	356.0	-
• Pensioners	41.0	-
Survivor Allowance		
• Active contributors	184.2	-
• Pensioners	115.7	-
Waiver of pension reduction	5.1	-
Former deputy heads	20.8	-
Early Retirement Incentive	-	1,734.7
Outstanding transfers[1]	269.5	-
Total actuarial liabilities	992.3	1,734.7
Actuarial surplus/(deficit)	**(485.2)**	**(70.1)**

[1] Outstanding transfer to Canada Post Corporation from RCA Account No. 1 is $231.0 million.

Since the last RCA valuation, the RCA No. 1 actuarial deficit has increased marginally (by $15.5 million) to $485.2 million as at 31 March 2002. The increase in the actuarial deficit is the net result of three factors, as follows:

- Increase due to salary increases during the intervaluation period greater than expected.
- Decrease due to 2003 Federal Budget that increases the currently frozen maximum annual pension accrual of $1,722 payable from a registered pension plan to $1,833 for calendar year 2004 and to $2,000 for calendar year 2005.
- Decrease due to changes in economic assumptions.

The actuarial deficit could be amortized, after taking in consideration the special payment of $77.7 million made at the end of plan year 2003, in 11 equal instalments of $48.3 million beginning 31 March 2004, based upon half the yield projected on the Superannuation Account shown in Appendix 7.

Since the last RCA valuation, the RCA No. 2 actuarial deficit has increased by $59.3 million to reach $70.1 million as at 31 March 2002. The actuarial deficit could be amortized, after taking into consideration the special payment of $4.7 million made at the end of plan year 2003, in 11 equal annual instalments of $7.7 million beginning 31 March 2004, based upon half the yield projected on the Superannuation Account show in Appendix 7.

2. Government RCA Normal Costs

The normal costs were computed for the RCA portion of the plan in the same manner as for the PSSA portion of the plan, as described in Appendix 6, except that the RCA actuarial assumptions described in Appendix 8 were used.

Table 8 Government RCA Normal Costs
($ millions)

	Plan Year		
	2003	2004	2005
Total Normal Cost			
Pensionable excess earnings	50.82	51.43	52.06
Survivor allowance	26.30	28.01	29.96
Deputy head	1.26	0.90	0.63
Total	78.38	80.34	82.65
Member Contributions			
Pensionable excess earnings	9.12	10.30	8.58
Deputy heads	0.19	0.14	0.09
Total member contributions	9.31	10.43	8.67
Government Normal Cost	69.07	69.91	73.98
Normal cost as % of total pensionable payroll	0.59%	0.56%	0.55%

Since the last RCA valuation as at 31 December 1998, the projected government normal cost for plan year 2003 has decreased by 0.08%, from 0.67% to 0.59%.

3. Solvency Valuation Results

The following balance sheet was prepared using the assets, methodology, and actuarial assumptions described in Appendix 9.

Table 9 RCA Solvency Balance Sheet
as at 31 March 2002 ($ millions)

	RCA No.1	RCA No. 2
Assets		
RCA Account	310.4	833.5
Refundable tax	196.7	831.1
Total assets	507.1	1,664.6
Liabilities		
Pensionable excess earnings		
• Active	209.1	-
• Pensioners	44.4	-
Survivor allowance		
• Active	585.9	-
• Pensioners	127.3	-
Waiver of pension reduction	5.4	-
Former deputy heads	24.7	-
Early Retirement Incentive	-	1,885.0
Outstanding transfers	269.5	-
Total Liabilities	1,266.3	1,885.0
Termination Expense	-	-
Solvency excess/(actuarial deficit)	(759.2)	(220.4)
Solvency ratio	40%	88%

III. Actuarial Opinion

In our opinion, considering that this report was prepared pursuant to the *Public Pensions Reporting Act,*

- the valuation input data on which it is based are sufficient and reliable;
- the assumptions that have been used are, in aggregate, appropriate; and
- the methodology employed is appropriate.

Based on the results of this valuation, we hereby certify that, as at 31 March 2002, the total government cost for the following three years is as follows:

Table 10 Total Government Cost
($ millions and % of pensionable payroll)

	Normal Cost				
Plan Year	PSSA	RCA	Other Contributions[1]	Total Cost	
2003	1,647.5	69.1	240.0	1,956.6	14.60%
2004	1,745.9	69.9	237.5	2,053.3	14.36%
2005	1,860.3	74.0	251.0	2,185.3	14.41%

If the plan were to be wound up on the valuation date, the value of the Superannuation Account assets would be greater than the Superannuation Account liabilities, the value of the Pension Fund assets would be less than the Pension Fund liabilities and the value of the RCA Account assets would be less than the RCA Account liabilities.

This report has been prepared, and our opinions given, in accordance with accepted actuarial practice, and particularly with the Canadian Institute of Actuaries' Consolidated Standards of Practice.

Elliot Trottier
Senior Actuary
Office of the Chief Actuary
Fellow of the Canadian Institute of Actuaries

Jean-Claude Ménard
Chief Actuary
Office of the Chief Actuary
Fellow of the Canadian Institute of Actuaries

Ottawa, Canada
9 September 2003

[1] Includes government contributions for prior service and both PSSA and RCA special payments. Fund administrative expenses are included in the normal cost.

APPENDICES

Appendix 1 - Developments Occurring After Valuation Date

1. Pension Fund Rate of Return for Plan Year 2003

The equity markets suffered substantial losses in plan year 2003 and so the Pension Fund rate of return (-12.5%, based on the method described in Appendix 4-B) fell short of the 6.5% return assumed for it herein. The long-term real rate of return assumed in this valuation is not influenced by the events of a single year unless a fundamental change in the investment environment is identified, which was not the case in plan year 2003. Emerging experience, differing from the assumptions, will result in gains or losses to be revealed in the next valuation.

Appendix 2 - Summary of Plan Provisions

The government has been providing its employees with a pension plan since 1870. Pensions for members of the Public Service are provided primarily under the *Public Service Superannuation Act* (PSSA) as enacted in 1954 and modified thereafter. Benefits are also provided to public servants under the *Special Retirement Arrangements Act*. Benefits are modified if the *Pension Benefits Division Act* is applicable.

The current plan provisions are summarized in this appendix without distinguishing between the benefits provided under the PSSA, which is a registered pension plan under the *Income Tax Act,* and those provided under retirement compensation arrangements, which differ from registered pension plans only in that taxation of contributions and investment earnings is current rather than deferred. The portion of the plan benefits in excess of the *Income Tax Act* limits for registered pension plans is provided under the retirement compensation arrangements described in Appendix 3.

The legislation shall prevail if there is a discrepancy between it and this summary.

A. Membership

Subject to the exceptions mentioned in the next paragraph, membership in the plan is compulsory for all full-time and part-time employees working 12 or more hours per week (except those who were grandfathered as at 4 July 1994) in the Public Service. This includes all positions in any department or portion of:

- the executive government of Canada;
- the Senate and the House of Commons;
- the Library of Parliament; and,
- any board, commission or corporation listed in a Schedule to the Act, as well as those designated as contributors by the President of the Treasury Board either individually or as members of a class for persons engaged as sessional employees, postmasters or assistant postmasters in revenue post offices and some others.

The main groups of persons employed in the Public Service to which the Act does not apply are:

- part-time employees working less than 12 hours per week;
- persons locally engaged outside Canada;
- employees of some Crown corporations, boards or commissions covered by their own pension plans; and
- sessional employees, postmasters or assistant postmasters in revenue post offices, and some others, unless designated as contributors by the President of the Treasury Board.

Since the previous valuation 17 entities, including Canada Post Corporation, have left the plan.

These entities accounted for about 20% of all PSSA active contributors as at the date of the previous valuation. This trend is expected to continue into fiscal year 2004, when two of the remaining entities (the Canadian Wheat Board and the Government of the Yukon Territory) are expected to leave the plan; however, the impact on the size of the plan will be minimal.

B. Contributions

1. Members

During the first 35 years of pensionable service, members contribute 4% of pensionable earnings up to the YMPE and 7.5% of salary above it. After 35 years of pensionable service, contributors make required contributions of 1% of pensionable earnings.

If eligible, a member may elect to contribute for prior service. The amount of the contribution is doubled if the prior service was accrued under an approved pension plan other than the PSSA.

2. Government

(a) Current Service

The government determines its normal monthly contribution as that amount, which when combined with the required contributions by members in respect of current service, is sufficient to cover the cost, as estimated by the President of the Treasury Board, of all future benefits that have accrued in respect of pensionable service during that month.

(b) Elected Prior Service

For prior service elections made before 1 April 2000 the government generally matches the resulting member contributions to the Superannuation Account; however, it makes no contributions if the member is paying the double rate.

For prior service elections made on or after 1 April 2000 the government generally contributes 2.50 times as much as the resulting member contributions to the Pension Fund; however, the multiple is only 0.75 if the member is paying the double rate.

(c) Fund Administrative Expenses

The government contributes the necessary amount to cover the administrative expenses incurred by the Pension Fund.

(d) Actuarial Surpluses

Bill C-78, which received Royal Assent on 14 September 1999, gives the government the authority, subject to limitations, to:

- debit actuarial surpluses from the Public Service Superannuation Account, and
- deal with any actuarial surpluses in the Public Service Pension Fund as they occur, either by reducing employee and/or employer contributions, by making withdrawals, or by modifying benefits.

(e) Unfunded Liability

If an unfunded actuarial liability is identified through a triennial statutory actuarial report, the Superannuation Account and/or the Pension Fund are to be credited with such annual amounts that in the opinion of the President of the Treasury Board will fully amortize the actuarial deficit over a period not exceeding 15 years.

C. Summary Description of Benefits

The Public Service pension plan mainly aims at providing an employment earnings-related lifetime retirement pension to the eligible members of the Public Service. The plan also provides benefits to members in case of disability and to the spouse and children in case of death.

Subject to integration with the pensions paid by the Canada Pension Plan and the Québec Pension Plan, the initial rate of retirement pension is equal to 2% of the highest average of annual pensionable earnings over any period of five consecutive years, multiplied by the number of years of pensionable service not exceeding 35. Once in pay, the pension is indexed annually with the Consumer Price Index. Such indexation also applies to deferred pensions during the deferral period.

Detailed notes on the following overview are provided in the following section.

Contributor's Type of Termination		Benefit
With less than two years of service[1]		Return of contributions
With two or more years of service[1]**; and**		
Disability		Immediate annuity
Death leaving no surviving spouse or eligible children		Minimum benefit
Death leaving surviving spouse and/or eligible children		Survivor annual allowance(s)
Leaving prior to age 45, except for death or disability		Deferred annuity (DA) or transfer value (TV)
Leaving at ages 45 to 49, except for death or disability, and	Operational service 20 years or more	Operational service annual allowance
	Otherwise	DA or TV
Leaving at age 50 or over, except for death or disability, and	Operational service 25 years or more	Operational service immediate annuity[2]
	• Operational service between 20 and 25 years	Operational service annual allowance[2]
	• Otherwise, but age 60 or over, or age 55 or over and service 30 years or more	Immediate annuity
	Otherwise	DA or annual allowance

Deferred and Immediate Pensioner's Type of Termination	Benefit
Disability before age 60 while entitled to a deferred annuity or an annual allowance	Immediate annuity while disabled
Death leaving no eligible surviving spouse or children	Minimum benefit
Death leaving eligible surviving spouse and/or children	Survivor annual allowance(s)

D. Explanatory Notes

1. Pensionable Earnings

Pensionable earnings means the annual employment earnings (excluding overtime but including pensionable allowances such as bilingual bonuses) of a contributor.

Pensionable payroll means the aggregate pensionable earnings of all contributors with less than 35 years of pensionable service.

1 Thresholds are determined using total pensionable service, including operational service.
2 Based on operational service only. Additional non-operational service, if any, results in the applicable non-operational benefit (see Note 9). Air Traffic Controllers who terminate involuntarily may qualify for special benefits.

2. Indexation

(a) Level of Indexation Adjustments

All immediate and deferred annuities (pensions and allowances) are adjusted every January to the extent warranted by the increase, as at 30 September of the previous year, in the 12-month average Consumer Price Index. If the indicated adjustment is negative, annuities are not decreased for that year; however, the next following adjustment is diminished accordingly.

(b) First Indexation Adjustment

Indexation adjustments accrue from the end of the month in which employment terminates. The first annual adjustment following termination of employment is prorated accordingly.

(c) Commencement of Indexation Payments

The indexation portion of a retirement, disability or survivor pension normally starts being paid when the pension is put into pay. However, regarding an operational service retirement pension, indexation payments start only when the the pensioner is either

- at least 55 years old, provided the sum of age and pensionable service is at least 85; or
- at least 60 years old.

This restriction does not apply to an Air Traffic Controller who resigned involuntarily.

3. Pensionable Service and Operational Service

Pensionable service of a contributor includes any period of service in the Public Service for which the contributor has been required to contribute or has elected to contribute, if eligible to do so, and such other types of service for which the contributor has elected to make the required special contributions to the Public Service Superannuation Account or Pension Fund. Pensionable service is limited to 35 years.

Operational service means, in the case of Correctional Service Canada employees, pensionable service by employees other than those engaged in staff colleges or national or regional headquarters. In the case of Transport Canada employees, it means pensionable service that requires a valid Air Traffic Controller License or a letter of authority issued by the Department of Transport. Operational service is subject to minor restrictions (as per the regulations) not described here. A member may elect to remove the operational service designation from any period of service, which then becomes regular pensionable service.

4. Return of Contributions

Return of contributions means the payment of an amount equal to the accumulated current and prior service contributions paid or transferred by the contributor into the plan. Interest is credited quarterly in accordance with the investment return on the Public Service Pension Fund.

5. Immediate Annuity

Immediate annuity means an unreduced pension that becomes payable immediately upon a pensionable retirement or pensionable disability. The annual amount is equal to 2% of the highest average of annual pensionable earnings of the contributor over any period of five consecutive years, multiplied by the number of years of pensionable service not exceeding 35. For contributors with periods of part-time pensionable service, earnings used in the five-year average are based on a full 37.5-hour workweek but the proportion of a full workweek resulting average is multiplied by the proportion of a full workweek averaged by the contributor over the entire period of pensionable service.

When a pensioner attains age 65 or becomes entitled to a disability pension from the Canada Pension Plan (CPP) or the Québec Pension Plan (QPP), the annual amount of pension is reduced by 0.7% of the *indexed C/QPP annual pensionable earnings*[1] (or, if lesser, the indexed five-year[2] pensionable earnings average on which the immediate annuity is based), multiplied by the *years of C/QPP pensionable service*[3].

Annuities are payable in equal monthly instalments in arrears until the end of the month in which the pensioner dies or when the disabled pensioner recovers from disability. Upon the death of the pensioner, either a survivor allowance (Note 12) or a residual death benefit (Note 13) may be payable.

6. Deferred Annuity

Deferred annuity means an annuity that becomes payable to a former contributor upon reaching age 60. The annual amount of the annuity is described in Note 5 but is also increased (per Note 2) to reflect indexation from date of termination to the commencement of benefit payments.

The deferred annuity becomes an immediate annuity during any period of disability beginning before age 60. If the disability ceases before age 60, the immediate annuity reverts to the original deferred annuity unless the pensioner elects an annual allowance

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1 *Indexed C/QPP annual pensionable earnings* means the average of the YMPE, as defined in the C/QPP, over the five calendar years leading up to and including the one in which pensionable service terminated, increased by indexation proportionate to that accrued in respect of the immediate annuity.

2 If the number of years of pensionable service is less than five, then the averaging is over the entire period of pensionable service.

3 *Years of C/QPP pensionable service* means the number of years of PSSA pensionable service after 1965 or after attaining age 18, whichever is later, but not exceeding 35.

(Note 8) that is the prescribed actuarial equivalent to the deferred annuity.

7. Transfer Value

Members who, at their date of termination of pensionable service, are under age 50 and are eligible for a deferred annuity may elect to transfer the commuted value of their benefits, determined in accordance with the regulations, to

- a locked-in Registered Retirement Savings Plan of the prescribed kind; or
- another pension plan registered under the *Income Tax Act;* or
- a financial institution for the purchase of a locked-in immediate or deferred annuity of the prescribed kind.

8. Annual Allowance For Members

Annual allowance means an annuity payable immediately on retirement or upon attaining age 50, if later. The amount of the allowance is equal to the amount of the deferred annuity to which the member would otherwise be entitled, reduced by 5% of such annuity multiplied by the difference between 60 and the age when the allowance becomes payable. However, if the member is at least 50 years old at termination, and has at least 25 years of pensionable service, then the difference is reduced (subject to the above as a maximum) to the greater of

- 55 minus the age, and
- 30 minus the number of years of pensionable service[1].

The Treasury Board can waive all or part of the reduction for members who are involuntarily retired at ages 55 and over with at least ten years of Public Service employment.

When a member in receipt of an annual allowance becomes disabled before reaching age 60, the annual allowance becomes an immediate annuity adjusted in accordance with regulations to take into account the amount of any annual allowance received prior to becoming disabled.

9. Operational Service Immediate Annuity and Annual Allowance

An *operational service immediate annuity* differs from an immediate annuity (Note 5) only in that it is available as early as age 50 with 25 years of operational service.

An *operational service annual allowance* differs from an annual allowance (Note 8) in two ways. Firstly it is available as early as age 45 with 20 years of operational service.

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1 For privatised members who elected not to transfer their benefits accrued under the *Public Service Superannuation Act* to their new employer's pension plan, service (including any operational) with the new employer is included.

Secondly the reduction factor is 5% multiplied by the greater of

- 50 minus the age, and
- 25 minus the years of operational service[1].

Except for Air Traffic Controllers who retire involuntarily, in which case it is based on 20 minus the years of operational service[1] (subject to a minimum of ten years).

The foregoing operational service-related benefits are calculated in relation to operational service only. Additional non-operational service results in the applicable non-operational benefit where any thresholds or reductions are based on total pensionable service, including operational service.

An Air Traffic Controller who involuntarily ceases to be employed in operational service may, after becoming employed in the Public Service in non-operational service, choose to receive immediately as much as one-half of the operational service benefit that would have been available on termination of employment. This is known as the "income-smoothing benefit".

10. Eligible Surviving Spouse

Eligible surviving spouse means the surviving spouse (includes a common-law or same-sex partner recognized under the plan) of a contributor or pensioner except if:

- the contributor or pensioner died within one year of commencement of the spousal union, unless the Treasury Board is satisfied that the health of the contributor or pensioner at the time of such commencement justified an expectation of surviving for at least one year;
- the pensioner married after ceasing to be a contributor, unless after such marriage the pensioner either:
    - became a contributor again, or
    - made an optional survivor benefit election within 12 months following marriage to accept a reduced pension so that the new spouse would be eligible for a survivor benefit. This reduction is reversed if and when the new spouse predeceases the pensioner or the spousal union is terminated for reason other than death.

11. Eligible Surviving Children

Eligible surviving children include all children of the contributor or pensioner who are under age 18, and any child of the contributor or pensioner who is age 18 or over but under 25, in full-time attendance at a school or university, having been in such attendance

[1] For privatized members who elected not to transfer their benefits accrued under the *Public Service Superannuation Act* to their new employer's pension plan, service (including any operational) with the new employer is included.

substantially without interruption since he or she reached age 18 or the contributor or pensioner died, whichever occurred later.

12. Annual Allowance for Eligible Survivor(s)

Annual allowance means, for the eligible surviving spouse and children of a contributor or pensioner, an annuity that becomes payable immediately upon the death of that individual. The amount of the allowance is determined with reference to a *basic allowance* that is equal to 1% of the highest average of annual pensionable earnings of the contributor over five consecutive years, multiplied by the number of years of pensionable service not exceeding 35.

The annual allowance for a spouse is equal to the basic allowance unless the spouse became eligible as a result of an optional survivor benefit election, in which case it is equal to the percentage of the basic allowance specified by the pensioner making the election.

The annual allowance for an eligible surviving child is equal to 20% of the basic allowance, subject to a reduction if there are more than four eligible surviving children in the same family. The allowance otherwise payable to an eligible surviving child is doubled if the child is an orphan.

Survivor annual allowances are not integrated with the Canada Pension Plan or the Québec Pension Plan and are payable in equal monthly instalments in arrears until the end of the month in which the survivor dies or otherwise loses eligibility. If applicable, a residual benefit (Note 13) is payable to the estate upon the death of the last survivor.

13. Minimum and Residual Death Benefits

If a contributor or a pensioner dies leaving no eligible survivor, the lump sum normally paid is the excess of five times the basic annuity[1] to which the contributor would have been entitled, or the pensioner was entitled, at the time of death over all amounts (excluding indexation adjustments) already paid to the pensioner.

The same formula is used to determine the residual benefit payable in a lump sum upon the death of an eligible survivor, except that all amounts (excluding indexation adjustments) already paid to the survivor are also subtracted.

[1] The basic annuity is the initial amount of immediate annuity, ignoring any offsets that might be applicable (Note 5).

14. Division of Pension with Former Spouse

In accordance with the *Pension Benefits Division Act*, upon the breakdown of a spousal union (including common-law), a lump sum can be transferred by court order or by mutual consent from the plan assets to the credit of the former spouse of a contributor or pensioner. The maximum transferable amount is half the value, calculated as at the transfer date, of the retirement pension accrued by the contributor or pensioner during the period of cohabitation. If the member's benefits are not vested, the maximum transferable amount corresponds to half the member's contributions made during the period subject to division, accumulated with interest at the rate applicable on a refund of contributions. The accrued benefits of the contributor or pensioner are then reduced accordingly.

Appendix 3 - RCA Benefit Provisions

This Appendix describes the Public Service pension plan benefits funded through retirement compensation accounts (RCAs) rather than through the registered PSSA plan. As described in Appendix 2, RCAs are pension plans not subject to the benefit limitations of registered pension plans because they are less tax-advantaged.

Effective 15 December 1994, RCA No. 1 was established pursuant to the *Special Retirement Arrangements Act* (SRAA) to provide all pension benefits in excess of those that may, in accordance with the *Income Tax Act* restrictions on registered pension plans, be paid from the PSSA pension plan.

Effective 1 April 1995, RCA No. 2 was established by the RCA regulations as a program for certain Public Service employees declared surplus before 1 April 1998 as part of the downsizing initiative. Participation was limited to individuals between ages 50 and 54 who met the conditions specified in the regulations. RCA No. 2 pays the difference between a pension unreduced for early retirement and the reduced pension payable from the Public Service Superannuation Account. It is funded entirely by the government.

The following benefits have been provided under RCA No. 1 since 20 November 1997, unless otherwise indicated, to the extent that they are in excess of the registered plan limit.

Benefit	**Registered plan benefit limit**
Waiver of pension reduction on involuntary termination, subject to • Treasury Board approval; and, • minimum age 55 with 10 years service	Mininum reduction is equal to 3% times the lesser of: • 60 minus the age when the pension becomes payable, • 30 minus the number of years of pensionable service, and • 80 minus the total of the member's age and years of pensionable service, all divided by 2.
Survivor allowance for service from 1 January 1992 onward (see note 12 of Appendix 2)	<u>Preretirement death</u> • Maximum spouse allowance is two-thirds of greater of A and B; and • Maximum aggregate dependants' allowance is the greater of A and B, where A is the amount of member annuity earned to date of death, and B is the hypothetical amount of member annuity earned to age 65 where the average annual salary is limited to 1.5 times the average YMPE <u>Postretirement death</u> The amount of spouse allowance is limited in any year to a maximum of two-thirds the retirement benefit that would have been payable to the member in that year.
Minimum lump sum death benefit (see note 13 of Appendix 2)	<u>Preretirement death</u> The amount of preretirement death benefit if the member has no eligible dependants is limited to the greater of the member contributions with interest and the present value of the member's accrued benefits on the day prior to death. <u>Postretirement death</u> If the member has no eligible dependants at retirement, then the minimum death benefit is limited to the member contributions with interest.
Continued benefit accrual for former deputy heads (provided since 15 December 1994 for service since then)	This entire benefit is outside the registered plan limit. Deputy heads ceasing employment under age 60 may elect to be deemed full-time employees absent from the Public Service on leave without pay up to age 60.
Elective service for service prior to 1 January 1990	The amount of lifetime retirement benefits for each such year of service is limited to two-thirds of the defined benefit limit (i.e. $1,722.22 for calendar year 2002) for the year in which the lifetime retirement benefits commence to be paid. For years subsequent to the commencement year of lifetime retirement benefits, this amount can be adjusted to reflect increases in the Consumer Price Index.
Excess pensionable earnings (provided since 15 December 1994 for service since then)	The highest average of pensionable earnings is subject to a prescribed yearly maximum that varies by calendar year and the registered plan's benefit formula. The prescribed maximum for the PSSA in the 2002 calendar year was $99,800.

Appendix 4 - Plan Assets and Rates of Return

A. Plan Assets

1. PS Superannuation Account

PSSA benefits earned up to 31 March 2000 are entirely financed through the Public Service Superannuation Account, which forms part of the Public Accounts of Canada.

The Account was credited with all PSSA contributions made by members and the government up to 31 March 2000, as well as with prior service contributions for elections made prior to 1 April 2000 and leave without pay contributions for periods before 1 April 2000 but remitted after that date. It is charged with both the benefit payments made in respect of service earned under the Account and the allocated portion of the plan administrative expenses.

The Account is credited with investment earnings as though net cash flows were invested quarterly in 20-year Government of Canada bonds issued at prescribed interest rates and held to maturity. No formal debt instrument is issued to the Account by the government in recognition of the amounts therein. Investment earnings are credited every three months on the basis of the average yield for the same period on the combined Superannuation Accounts of the Public Service, Canadian Forces and RCMP pension plans.

Table 11 Reconciliation [1] of Balances in Superannuation Account
($ millions)

Plan year	2000	2001	2002	2000-2002
Public Accounts opening balance	80,274.5	86,494.7	81,574.7	80,274.5
INCOME				
Investment earnings	7,403.9	7,652.3	6,887.1	21,943.3
Employer contributions	1,736.9	226.2	52.2	2,015.3
Employee contributions	694.9	188.1	66.6	949.6
Transfers received	11.1	11.6	30.2	52.9
Actuarial liability adjustments	0.0	(8,100.0)	0.0	(8,100.0)
Subtotal	9,846.8	(21.8)	7,036.1	16,861.1
EXPENDITURES				
Annuities	3,207.9	3,273.4	3,433.2	9,914.5
Pension divisions	31.6	30.4	38.4	100.4
Return of contributions	9.0	5.9	2.8	17.7
Transfers to other pension plans	126.3	142.2	205.7	474.2
Canada Post transfer	0.0	1,235.0	4,181.8	5,416.8
Minimum benefits	14.5	12.9	12.3	39.7
Administrative expenses	0.0	36.5	46.7	83.2
Pension transfers	237.3	161.9	139.5	538.7
Subtotal	3,626.6	4,898.2	8,060.4	16,585.2
Public Accounts closing balance	86,494.7	81,574.7	80,550.4	80,550.4

[1] Balances and subtotals in this table may differ from the underlying additions due to rounding.

The foregoing table shows the reconciliation of the assets in the PS Superannuation Account between the last valuation date and the current valuation date. Since the last valuation, the Account balance has grown by $276 million (a 0.3% increase) to reach $80.6 billion as at 31 March 2002.

2. PS Pension Fund

Since 1 April 2000 PSSA contributions (except for prior service elections made prior to 1 April 2000) have been credited to the PS Pension Fund. The Fund is invested in the financial markets with a view to achieving maximum rates of return without undue risk.

The Fund has been credited with all PSSA contributions since 1 April 2000, as well as with prior service contributions in respect of elections made after 31 March 2000 and leave without pay contributions for periods after 31 March 2000. The Fund is also credited with the net investment earnings generated by its capital assets. It is charged with both the benefit payments made in respect of service earned under the Fund and the allocated portion of the plan administrative expenses.

Table 12 Reconciliation [1] of Balances in Pension Fund
($ millions)

Plan year	2001	2002	2001-2002
Opening balance	-	1,885.8	-
INCOME			
Investment earnings[2]	(161.6)	104.5	(57.1)
Employer contributions	1,476.4	1,608.3	3,084.7
Employee contributions	579.1	632.8	1,211.9
Transfers received	3.4	1.9	5.3
Subtotal	1,897.4	2,347.6	4,244.9
EXPENDITURES			
Annuities	0.8	5.3	6.1
Pension divisions	0.1	0.1	0.2
Return of contributions	2.3	6.3	8.6
Transfers to other pension plans	0.0	1.5	1.5
Canada Post transfer	0.0	160.0	160.0
Minimum benefits	0.1	0.3	0.4
Administrative expenses[3]	3.6	2.0	5.6
Pension transfer values	1.9	10.1	12.1
Subtotal	11.5	190.8	202.3
Closing Balance	1,885.9	4,042.6	4,042.6

1 Balances and subtotals in this table may differ from the underlying additions due to rounding.
2 Net of investment management and administrative expenses charged by the Public Sector Pension Investment Board.
3 These are expenses incurred for the administration of the plan only.

The foregoing table shows the reconciliation of the assets (market value) in the PS Pension Fund from its inception to the current valuation date.

B. Rates of Return

The following PSSA rates of return by plan year were calculated using the foregoing entries. The Account yields are based on book values because the notional bonds are considered held to maturity. The Fund yields are based on market values to measure its actual performance. The results were computed using the dollar-weighted approach, assuming a uniform distribution of cash flows during the plan year (except for actuarial liability adjustments, which occurred on 31 March) by imputing to them one-half year of interest.

Plan Year	Superannuation Account	Pension Fund
2000	9.29%	n/a
2001	9.08%	(16.02%)
2002	8.87%	3.41%

C. Sources of Asset Data

The Account and Fund entries shown in section A above were taken from the Public Accounts of Canada. In accordance with section 8 of the *Public Pensions Reporting Act*, the Office of the Comptroller General of Canada provided a certification of the assets of the plan as at 31 March 2002.

Appendix 5 - Membership Data

A. Sources of Membership Data

The valuation input data required in respect of contributors (both active and non-active), pensioners and survivors are extracted from master computer files maintained by the Superannuation Directorate of the Department of Public Works and Government Services Canada. The Compensation Systems Branch of that department is responsible for the extraction of the data.

The main valuation data file supplied by the Superannuation Directorate contained the status information on all members during the period from 1 April 1998 to 31 March 2001.

RCA benefits for waiver of pension reduction and for survivor allowances had to be estimated since these benefits are currently being paid from the registered plan. This will be corrected retroactively by the end of fiscal year 2003.

These data were projected to the 31 March 2002 valuation date generally using the demographic assumptions of the current valuation and the actual economic experience (1.6% indexation increase for pensioners and 2.85% general pay increases for contributors).

B. Validation of Membership Data

1. Status-Related Tests

The following status tests were made on the main valuation data file:

(a) a consistency check that a status could be established for each record of a member. The status of a member may change over time but at a given point in time it can be only one of the following: contributor, outstanding termination, pensioner, deceased leaving an eligible survivor;

(b) a consistency check of the changes in status of a member during the intervaluation period; e.g.

- if a contributor record indicated that the member retired, then a pensioner record should exist; and
- if a contributor or pensioner record indicated that the member died leaving an eligible survivor, then a corresponding survivor record should exist;

(c) a reconciliation between the status of members as at 1 April 1998 from the current valuation data and the status of the members as at 31 March 1998 from the previous valuation data; and

(d) a comparison of valuation data as at 31 March 2001 with the membership shown in the Report on the Administration of the *Public Service Superannuation Act* for the fiscal year ending 31 March 2001.

2. Benefit-Related Tests

Consistency tests were made to ensure that all proper information to value the member benefits based on individual statuses as at 31 March 2001 was included, by verifying that

(a) For Active Members

- the pensionable service was reasonable in relation to the attained age;
- the salary was included and, if not, imputing a salary by updating a salary rate from a previous year with an average earnings increase or failing that, using the average salary rate for that sex; and
- salaries included negotiated increases in effect and increasing the salary rates accordingly if this was not the case.

(b) For Pensioners and Survivors in Receipt of an Annuity

- the amount of the annuity, including indexation, was included; and
- the benefits were indexed up to 1 January 2001.

(c) For Outstanding Terminations

- the lump sum payment was recognized (an adjustment was also made for future retroactive pay equity settlements).

(d) For Adjustments to Status and Benefit Data

- appropriate adjustments were made to the basic data, after consulting with the data providers, based on the omissions and discrepancies identified by the tests described herein and several additional tests.

C. Membership Data

The following tables 13 to 15 show the detailed reconciliation of membership data since the last valuation. Detailed membership data upon which this valuation are shown in Appendix 11.

Table 13 Reconciliation of Contributors

	Male	Female	Total
As at 31 March 1998	**144,197**	**130,539**	**274,736**
Data corrections	(379)	(1,670)	(2,049)
New members	32,754	46,335	79,089
Cash benefit - return of contributions or transfer value	(12,671)	(16,537)	(29,208)
Disability annuity	(673)	(747)	(1,420)
Annuity or annual allowance (except disabled)			
• Early Retirement Incentive Program	(838)	(475)	(1,313)
• Otherwise	(8,497)	(4,541)	(13,038)
Entities leaving the plan	(34,193)	(21,567)	(55,760)
Deferred annuity	(669)	(632)	(1,301)
Death with no eligible survivor	(170)	(124)	(294)
Death with survivor annual allowance(s)	(520)	(209)	(729)
Benefit option not yet chosen	(3,319)	(3,592)	(6,911)
As at 31 March 2001	**115,022**	**126,780**	**241,802**
Active status	112,486	120,913	233,399
On leave without pay	1,919	4,626	6,545
Non-active status	617	1,241	1,858

Table 14 Reconciliation of Pensioners

	Deferred Annuity or Deferred AA[1]			Disability Annuity			Immediate Annuity or AA[1]		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
As at 31 March 1998	**4,321**	**2,672**	**6,993**	**7,575**	**5,341**	**12,916**	**102,090**	**46,324**	**148,414**
Data corrections	(543)	(74)	(617)	(252)	(195)	(447)	418	347	765
Transfer from contributor status	669	632	1,301	673	747	1,420	9,335	5,016	14,351
Transfer from deferred status	(529)	(283)	(812)	-	-	-	529	283	812
Transfer from annuity status	-	-	-	22	15	37	(22)	(15)	(37)
Transfer to contributor status	(23)	(54)	(77)	-	-	-	(35)	(59)	(94)
Death with no survivors	(12)	(8)	(20)	(397)	(316)	(713)	(3,990)	(3,165)	(7,155)
Death with survivors	(16)	(3)	(19)	(605)	(100)	(705)	(7,070)	(647)	(7,717)
As at 31 March 2001	**3,867**	**2,882**	**6,749**	**7,016**	**5,492**	**12,508**	**101,255**	**48,084**	**149,339**

[1] AA means Annual Allowance.

Table 15 Reconciliation of Survivors

	Surviving Spouses			Children and Students		
	Widows	Widowers	Total	Children	Students	Total
As at 31 March 1998	**48,897**	**2,577**	**51,474**	**1,455**	**1,196**	**2,651**
Data corrections	(87)	(3)	(90)	(116)	53	(63)
New survivors from current contributors	498	192	690	433	191	624
New survivors from former contributors	7,655	739	8,394	130	130	260
Surviving spouse deaths	(6,647)	(406)	(7,053)	-	-	-
Children attaining age 18 and terminating	-	-	-	(63)	-	(63)
Children attaining age 18 and becoming students	-	-	-	(622)	622	-
Students terminating	-	-	-	-	(974)	(974)
As at 31 March 2001	**50,316**	**3,099**	**53,415**	**1,217**	**1,218**	**2,435**

Appendix 6 - PSSA Going-Concern Valuation Methodology

A. Plan Assets

1. Superannuation Account

The Superannuation Account assets consist essentially of the recorded balance in the Public Accounts of Canada. These assets are shown at the book value of the underlying notional bond portfolio described in Appendix 4. For consistency the liabilities are determined using the projected Account yields, shown in Appendix 7, that fully reflect the earning power of the assets.

The only other Account-related asset consists of the discounted value of future member contributions and government credits in respect of prior service elections and leave without pay service. The discounted value of the future contributions and credits was calculated using the projected Account yields.

2. Pension Fund

For valuation purposes, we used an adjusted market value method to determine the actuarial value of the Pension Fund assets. Under the method, the difference between all investment returns accrued during a given plan year and the expected investment returns for that years based on the previous report assumptions is spread over five years.

As a result the actuarial value of assets is a five-year smoothed market value where the appreciation of investment gains or losses is recognized at the rate of 20% per year. The value produced by this method is related to the market value of the assets, but is more stable than the market value.

The actuarial value of the assets, determined as at 31 March 2002, under the adjusted market value method is $4,275.3 million. This value was determined as follows:

Table 16 Actuarial Value of Pension Fund Assets
as at 31 March 2002 ($ millions)

	Plan Year		
	2001	2002	
Actual net investment return	(164.2)	99.4	
Expected investment return	74.3	211.3	
Investment gains (losses)	(238.5)	(111.9)	
Unrecognized percentage	60%	80%	
Unrecognized investment gains (losses)	(143.1)	(89.6)	
Market value as at 31 March 2002			4,042.6
Less			
Unrecognized investment gains (losses)			(232.7)
Actuarial value as at 31 March 2002			4,275.3

The only other Fund-related asset consists of the discounted value of future member and government contributions in respect of prior service elections and leave without pay service. The discounted value of the future contributions and credits was calculated using the assumed yield on the Pension Fund.

B. Normal Costs and Liabilities

To determine the PSSA normal costs and liabilities, the cost effect of the yearly maximum salary cap and other benefit limits under the *Income Tax Act* described in Appendix 3 are applied as an offset to the liabilities and normal costs calculated without consideration thereof. The method to calculate the offset is fully described in Appendix 8 discussing the RCA valuation methodology.

1. Normal Costs

The projected accrued benefit actuarial cost method (also known as the projected unit credit method) was used to compute normal costs. Under this method the normal cost computed in respect of a given year is the sum of

- the value, discounted in accordance with the projected Fund yields shown in Appendix 7, of all future benefits considered to accrue in respect of that year's service, and
- the estimated administrative expenses to be charged to the Fund in that year.

Consistent with this cost method, pensionable earnings are projected up to retirement using the assumed annual increases in average pensionable earnings (including seniority and promotional increases).

2. Liabilities

(a) Contributors

Consistent with the projected accrued benefit actuarial cost method employed to estimate normal costs, the liabilities in respect of contributors as at the valuation date correspond to the value, discounted in accordance with the projected yields on the Account or the Fund described below and shown in Appendix 7, of all future benefits accrued as at that date in respect of all previous service.

(b) Pensioners and Survivors

Consistent with accepted actuarial practice and standards, the liabilities as at the valuation date in respect of pensioners (including deferred annuitants) and survivors correspond to the value, using the projected yields on the Account or the Fund described in section C below and shown in Appendix 7, of all future benefits.

3. Projected Yields

The projected yields (shown in Appendix 7) assumed in computing the present value of benefits accrued under the Superannuation Account (i.e. the Account liabilities) are the projected annual yields on the combined book value of the Superannuation Accounts of the Public Service, Canadian Forces, and RCMP pension plans.

The projected Account yields were determined by an iterative process involving the following:

- the combined notional bond portfolio of the three Accounts as at the valuation date;
- the assumed future new money interest rates (also shown in Appendix 7);
- the future expected benefits payable in respect of all pension entitlements accrued up to 31 March 2002;
- the expected future contributions for prior service elections, and
- the expected future administrative expenses,

always taking into account that each quarterly interest credit to an Account is calculated as if the principal at the beginning of a quarter remains unchanged during the quarter.

The projected yields (shown in Appendix 7) assumed in computing the present value of the benefits accrued or accruing under the Pension Fund (i.e. the Fund liabilities and the normal cost) were developed on the basis of the Fund holding a diversified mixture of assets.

D. Membership Data

For valuation purposes, data for active contributors were grouped by individual age and number of years of service and by $5,000 annual salary ranges.

The member data shown in Appendix 4 were provided as at 31 March 2001, which is one year earlier than the valuation date of this report. These data were accordingly projected to the 31 March 2002 valuation date generally using the demographic assumptions of the current valuation and the actual economic experience in the one-year projection period.

Future member contributions in respect of elected prior service and leave without pay service took into account only the payment streams that commenced prior to 1 April 2001 and were still in effect at 31 March 2002. Only payments due after 31 March 2002 were included.

Appendix 7 - PSSA Going-Concern Actuarial Assumptions

The plan being sponsored by the government, the likelihood of the plan being wound-up with insufficient assets is practically nonexistent; consequently all the assumptions used in this report are best-estimate assumptions, i.e. they reflect our best judgement of the future long-term experience of the plan.

A. Economic Assumptions

1. Key Economic Assumptions

The following key economic assumptions are required for valuation purposes. These assumptions are generally lower than those used in the previous valuation.

(a) Level of Inflation

Price increases, as measured by changes in the Consumer Price Index, tend to fluctuate from year to year. Based on historical trends, the renewed commitment of the Bank of Canada and the government to keep inflation between 1% and 3% over the next five years and judgement about the long-term outlook for inflation, an ultimate rate of price increase of 2.7% was assumed for 2014 and thereafter. Recognizing recent experience, the rate of price increase is assumed at 2.2% for plan year 2003 and 2.0% for years 2004 to 2007. From 2008 the rate is then uniformly increased to its ultimate level of 2.7% in 2014. In the previous valuation the ultimate rate of price increase was assumed to be 3.0%.

(b) Real Increases in Average Earnings

Salary increases consist of a combination of inflation, productivity growth (i.e. real increase in average employment earnings in excess of inflation) and seniority and promotional increase. Seniority and promotion is strongly service-based and is therefore considered to be a demographic assumption rather than an economic assumption.

The assumed ultimate productivity rate was 0.9% per annum. This is closer to the average Canadian experience of the past 50 years (1.43% per annum) than that of the past 25 years (-0.06% per annum). Real increases in average earnings were assumed to rise gradually over a 15-year select period to reach the ultimate 0.9% per annum in plan year 2016. In the previous valuation an ultimate productivity rate of 1.0% was used.

(c) Real Rate of Return on Long-Term Government of Canada Bonds

The ultimate real rate of return on long-term Government of Canada bonds was assumed at 3% per annum based on historical trends; this is unchanged from the previous valuation.

(d) Real Rate of Return on Fund

For the assets invested by the Public Sector Pension Investment Board (PSPIB), it is assumed that the real rate of return on investments will be 4.3% net of investment expenses (the ultimate level of inflation being 2.7%). The assumed long-term real rate of return on PSPIB assets takes into account the distribution of investments by category. In the previous valuation, an ultimate real rate of return of 4.25% was used (the ultimate level of inflation being 3.0%).

Note that all of the real rates of return presented in this report are actually real-return differentials, i.e., the difference between the effective annual rate of return on investments and the rate of increase in prices. This differs from the technical definition of the real rate of return, which, in the case of the ultimate Fund assumption, would be 4.19% (derived from 1.07/1.027) rather than 4.30%.

For the period ending December 2001, the following table was prepared based on the Canadian Institute of Actuaries Report on Canadian Economic Statistics 1924-2001.

Period of Years Ending 2001	15	25	50
Level of Inflation	2.54%	4.56%	3.91%
Real Increases in Average Earnings[1]	0.16%	(0.06%)	1.43%
Real Return on Long-Term Canada Bonds[1]	7.61%	5.64%	2.90%
Average Real Return on Diversified Portfolios[1]	7.30%	6.87%	4.29%[2]

2. Derived Economic Assumptions

The following assumptions were derived from the key economic assumptions:

(a) Projected Yields on Superannuation Account

These yields are required for the computation of present values of benefits to determine the Superannuation Account liabilities. The methodology used to determine the projected yields on the Account is described in Appendix 6.

(b) Projected Yields on Pension Fund

These yields are derived from the assumed future level of inflation and the real return on the Fund. These yields are required for the computation of present values of benefits to determine the Fund liabilities and the normal costs. The assumed yield of 6.3% per annum for plan year 2004 is assumed to increase gradually to 7.0% per annum by plan year 2014.

(c) Increase in the Year's Maximum Pensionable Earnings (YMPE)

The YMPE is involved in the valuation process because the plan is integrated with the Canada Pension Plan. The assumed increase in the YMPE for a given year was derived, in accordance with the *Canada Pension Plan*, to correspond to the increase in the assumed Industrial Aggregate of Average Weekly Earnings (IAAWE) over successive 12-month periods ending on 30 June. The IAAWE is deemed to include a component for seniority and promotional increases; consequently the ultimate increase in the YMPE is assumed to be 0.2% higher the corresponding increase in average pensionable earnings.

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1 These real rates are calculated after the level of inflation is removed geometrically.
2 This average is over the last 40 years.

(d) Maximum Pensionable Earnings

Because the plan is integrated with the Canada Pension Plan and the Québec Pension Plan, the tax-related maximum pensionable earnings were derived from both the maximum annual pension accrual under a registered defined benefit plan and the YMPE. The maximum annual pension accrual of $1,722 for calendar years 2002 and 2003 will increase to $1,833 for 2004 and to $2,000 for 2005 in accordance with the 2003 Federal Budget; thereafter, the maximum annual pension accrual is assumed to increase in accordance with the assumed increase in the Industrial Aggregate.

(e) Increase in Pension Indexing Factor

The year's pension indexing factor is involved in the valuation process by virtue of its role in maintaining the purchasing power of pensions. It was derived by applying the indexation formula described in Appendix 2, which relates to the assumed Consumer Price Index increases over successive 12-month periods ending on 30 September.

(f) Transfer Value Real Interest Rate

In accordance with the Recommendations for the Computation of Transfer Values from Registered Pension Plans published by the Canadian Institute of Actuaries, the real interest rate used for the first 15 years following the computation corresponds to the new money real rate of interest for the year of computation plus 0.25%; thereafter, the real rate of interest is 3.25%.

3. Summary of Key and Derived Economic Assumptions

Table 17 Economic Assumptions

(%)

	Inflation		Employment Earning Increases				Interest		
Plan Year	CPI Increase	Pension Indexing[1]	Industrial Aggregate	YMPE[1]	Average Pensionable Earnings[1,2]	Maximum Pensionable Earnings[1,3]	New Money Rate	Yield on Account	Yield on Fund
2003	2.2	1.6	2.1	2.0	4.5	0.3	5.2	8.43	6.5
2004	2.0	2.1	2.2	2.2	2.3	5.9	5.0	8.30	6.3
2005	2.0	2.0	2.3	2.3	2.3	8.1	5.0	8.06	6.3
2006	2.0	2.0	2.4	2.4	2.4	2.4	5.0	7.81	6.3
2007	2.0	2.0	2.6	2.5	2.5	2.5	5.0	7.60	6.3
2008	2.1	2.1	2.8	2.6	2.6	2.6	5.1	7.42	6.4
2009	2.2	2.2	3.0	2.8	2.7	2.8	5.2	7.21	6.5
2010	2.3	2.3	3.2	3.0	2.9	3.0	5.3	7.01	6.6
2011	2.4	2.4	3.3	3.2	3.1	3.2	5.4	6.81	6.7
2012	2.5	2.5	3.4	3.4	3.2	3.4	5.5	6.42	6.8
2013	2.6	2.6	3.5	3.5	3.3	3.5	5.6	6.23	6.9
2014	2.7	2.7	3.6	3.6	3.4	3.6	5.7	6.09	7.0
2015	2.7	2.7	3.7	3.7	3.5	3.7	5.7	5.96	7.0
2016	2.7	2.7	3.8	3.8	3.6	3.8	5.7	5.76	7.0
2017	2.7	2.7	3.8	3.8	3.6	3.8	5.7	5.62	7.0
2018	2.7	2.7	3.8	3.8	3.6	3.8	5.7	5.52	7.0
2019	2.7	2.7	3.8	3.8	3.6	3.8	5.7	5.50	7.0
2020	2.7	2.7	3.8	3.8	3.6	3.8	5.7	5.50	7.0
2021	2.7	2.7	3.8	3.8	3.6	3.8	5.7	5.47	7.0
2022	2.7	2.7	3.8	3.8	3.6	3.8	5.7	5.46	7.0
2023	2.7	2.7	3.8	3.8	3.6	3.8	5.7	5.45	7.0
2024	2.7	2.7	3.8	3.8	3.6	3.8	5.7	5.44	7.0
2025	2.7	2.7	3.8	3.8	3.6	3.8	5.7	5.47	7.0
2026	2.7	2.7	3.8	3.8	3.6	3.8	5.7	5.50	7.0
2027	2.7	2.7	3.8	3.8	3.6	3.8	5.7	5.54	7.0
2028	2.7	2.7	3.8	3.8	3.6	3.8	5.7	5.57	7.0
2029	2.7	2.7	3.8	3.8	3.6	3.8	5.7	5.60	7.0
2030	2.7	2.7	3.8	3.8	3.6	3.8	5.7	5.63	7.0
2031	2.7	2.7	3.8	3.8	3.6	3.8	5.7	5.65	7.0
2032	2.7	2.7	3.8	3.8	3.6	3.8	5.7	5.68	7.0
2033+	2.7	2.7	3.8	3.8	3.6	3.8	5.7	5.70	7.0

1 Assumed to be effective as at 1 January.
2 Exclusive of seniority and promotional increases.
3 Calendar year 2002 Maximum Pensionable Earnings were $99,800.

B. Demographic Assumptions

Except where otherwise noted all demographic assumptions were determined from the plan's own experience, as was done in the past. Where applicable, assumptions of the previous valuation were updated to reflect the available intervaluation experience (usually April 1998 to March 2001). Tables 28 to 36 of Appendix 12 show the details of the demographic assumptions discussed below.

1. Seniority and Promotional Salary Increases

Seniority means length of service within a position and *promotion* means moving to a more highly-paid position. The assumed rates for males were increased by roughly 25% at most durations; for females the increase was approximately half as much.

2. New Members

It was assumed that the distribution of new members by age, sex and initial salary rate would be the same as that of members with less than one year of service at the valuation date. Initial salary is assumed to increase in future plan years in accordance with the assumption for average earnings increase.

It was assumed that the number of new contributors would be such that the total number of plan contributors would increase as follows:

Plan Year	Increase
2002	7.0%
2003	4.7%
2004	4.0%
2005	2.5%
2006	2.5%
2007+	0%

3. Pensionable Retirement

The rates of pensionable retirement assumed for the main group of contributors are generally 5% to 10% lower than assumed in the previous valuation. The pensionable retirement rates for the operational service group have more or less decreased to the same extent except for those retiring before age 60 with less than 25 years of service, where the decrease is roughly 60%.

4. Disability Retirement

The disability incidence rates were significantly revised to reflect the intervaluation experience. All disability incidence rates are about 15% lower than assumed in the previous valuation.

As in the previous valuation it was assumed that 75% of future new disability pensioners would receive a C/QPP disability pension, which would reduce their disability pension payable from the plan accordingly.

5. Withdrawal

Withdrawal means ceasing to be employed for reasons other than death or retirement with an immediate annuity or an annual allowance. The assumed rates for the main group females are 15% to 20% lower than those of the previous valuation; for males the decreases are half as much as for females. The assumed rates for the operational service group are 40% lower than previously.

Terminating contributors with more than two years of service are assumed to elect a transfer value rather than a deferred annuity or return of contributions.

6. Mortality

The assumed rates are either the same as or generally very close to those projected for plan year 2003 and latter in the previous valuation. The mortality improvement assumption was based on a 25-year select period with an ultimate mortality improvement of 0.5% at all ages. The first-year improvement factors (i.e. for year 2000) were revised to reflect the mortality improvement of the 1995-97 Life Table for Canada relative to the 1985-87 Table. The intermediate factors were obtained by linear interpolation between the first-year and ultimate factors.

7. Family Composition

The family composition assumptions were retained without change from the previous valuation. Included therein are

- proportion of contributors and pensioners married at death;
- average number of children surviving a member or contributor; and
- average age of new survivors.

To determine the value of pensions payable to eligible children, the rates of pension termination were assumed to be zero prior to age 17 and 16% per annum thereafter until expiry of the benefit on the 25th birthday.

C. Other Assumptions

1. Pension Benefits Division/Optional Survivor Benefit/Leave Without Pay

Pension benefits divisions have almost no effect on the valuation results because the plan liabilities are reduced on average by roughly the amount paid to the credit of the former spouse. Consequently, no future pension benefits divisions were assumed in estimating normal costs and liabilities. However, past pension benefits divisions were fully reflected in liabilities.

Two other provisions, namely the optional survivor benefit and future suspensions of membership while on leave without pay, were also treated like pension benefits divisions for the same reason.

2. Minimum Postretirement Death Benefit

This valuation does not take into account the minimum death benefit described in Note 13 of section D of Appendix 2, in respect of deaths occurring after retirement. The resulting understatement of accrued liability and normal cost is not material because a majority of the relatively few pensioners who die in the early years of retirement do leave an eligible survivor.

3. Administrative Expenses

It is estimated that administrative expenses will be 0.35% of pensionable payroll, which is 0.05% greater than in the previous valuation. The allocation of the expenses has also been revised. In plan year 2003 the Account is assumed to be charged with 94% of the total expenses, reducing by 2% each year thereafter.

The future expenses expected to be charged to the Account have been capitalized and shown as a liability on the balance sheet whereas the expenses to the Fund have been added to the normal cost as they occur.

4. Funding of Elected Prior Service and Leave Without Pay Service

The assumed future government credits in respect of prior service elections and leave without pay service vary according to the rate paid by the contributor (i.e. single or double) and the vehicle (i.e. Account or Fund) into which the contributions are deposited. The government credits expressed as a percentage of the relevant member contributions are as follows:

Vehicle	Single Rate	Double Rate
Account	100%	0%
Fund	250%	75%

Where data on single or double rate were missing, it was assumed that 76% of the member contributions were at the single rate and 24% at the double rate.

5. Outstanding Terminations

Amounts paid from 1 April 2002 onward for terminations that occurred prior to that date were estimated from historical trends and from actual payments made from 1 April 2002 onward.

6. Disability Incidence Rates for Pensioners Under Age 60

Both deferred pensioners and pensioners receiving an annual allowance while under age 60 were assumed to have a 0% disability rate. The resulting understatement of liabilities and normal costs is negligible.

7. Recovery Rates for Disability Pensioners

No recoveries were assumed for disability pensioners. The resulting overstatement of liabilities and normal costs is negligible.

8. Sex of Surviving Spouses

Each eligible surviving spouse is assumed to be of the opposite sex.

Appendix 8 - RCA Going-Concern Valuation Methodology and Assumptions

A. Valuation of Assets

The assets comprise the recorded balance in the Retirement Compensation Arrangements Account, which forms part of the Public Accounts of Canada, and a refundable tax. Each calendar year a cash transfer is made to the Canada Customs and Revenue Agency (CCRA) such that in total half of the assets are held by the CCRA as a refundable tax.

The RCA Account is not invested in marketable securities. Instead, the Government borrows the plan assets. Investment earnings are credited every three months in accordance with the actual average yield for the same period on the combined Superannuation Accounts of the Public Service, Canadian Forces and Royal Canadian Mounted Police pension plans. The actuarial asset value is equal to the book value.

B. Valuation of Liabilities

Described in this Appendix are the liability valuation methodologies used and any differences in demographic assumptions from those used in the PSSA valuation.

1. Terminally Funded RCA Benefits

The following RCA benefits are being terminally funded (i.e. not prefunded but on an occurrence basis):

- Early Retirement Incentive (ERI) program
- preretirement survivor benefits
- minimum death benefit
- waiver of pension reduction on compulsory early retirement
- elective service

Except for the now-closed ERI program, the above benefits are terminally funded because they are uncommon or of little financial significance. For example, the preretirement survivor benefit becomes payable only when the average salary is less than 1.4 times the YMPE. As well, the RCA minimum death benefit is expected to occur only with deaths at younger ages where the probability of death is small.

2. RCA Postretirement Survivor Benefits

The limit on the amount of spousal annual allowance that can be provided under the PSSA decreases at the same time the member’s pension reduces due to the C/QPP offset, usually at age 65.

This benefit was valued conservatively by assuming the plan limit is always reduced by the C/QPP offset. The liability overstatement is minor because the probability of the former contributor dying prior to age 65 is small. (This overstatement tends to be offset by the understatement of accrued liability caused by terminally funding the preretirement survivor benefit.) The projected accrued benefit cost method was used to estimate the liabilities and normal costs for this RCA benefit.

3. Continued Benefit Accrual for Former Deputy Heads

All former deputy heads who accrued or are accruing benefits are included. For those accruing benefits, it was assumed that they would cease to do so when first eligible for an immediate annuity.

4. Excess Pensionable Earnings

The projected accrued benefit cost method was used to estimate plan liabilities and normal costs for benefits in excess of the Maximum Pensionable Earnings (MPE).

The expected salary of a member at termination was based not on the seniority and promotional salary increase assumption described in Appendix 7 but on the assumed salary level the member has attained by that time. A probability distribution was developed to determine the salary level at termination, based on the current membership data. The following table shows the projected salary (in current dollars) of those assumed to retire with a salary exceeding the Maximum Pensionable Earnings of $99,800 for calendar year 2002.

Table 18 Assumed Future Retirements with Salary Exceeding Current MPE

Current Salary Level	Current Population	Salary ($ thousands) at Termination				
		100-110	110-121	121-132	132-165	165+
($ thousands)						
44-55	64,601	732	260	90	56	0
55-66	31,543	812	291	119	65	15
66-77	20,265	968	375	148	98	20
77-88	8,886	1,007	371	163	98	23
88-100	3,927	1,097	408	175	136	34
100-110	2,607	1,676	544	203	143	41
110-121	1,174	-	704	258	166	46
121-132	627	-	-	368	207	52
132-165	590	-	-	-	471	119
165+	217	-	-	-	-	217
TOTAL	134,437	6,292	2,953	1,524	1,441	567

5. Administrative Expenses

To compute the liabilities and normal costs, no provision was made regarding the expenses incurred for the administration of the RCA. These expenses, which are not charged to the RCA Account, are borne entirely by the government and are commingled with all other government expenses.

C. Actuarial Assumptions

The valuation economic assumptions are those described in Appendix 7 and shown in Table 17, except that the interest discount rate used to determine the present value of the RCA liabilities and normal cost is one-half of the yield projected on the combined Superannuation Accounts.

Except for the modifications described in section B and the modified withdrawal rates of the next paragraph, the demographic assumptions for the RCA valuation are those used for the going-concern PSSA valuation, described in section B of Appendix 7.

The going-concern rates of withdrawal were modified for RCA purposes. For members assumed to have a higher salary level at withdrawal, the withdrawal rate was assumed to be zero for a number of years following the valuation date, as follows:

Assumed Salary Level Increases Before Withdrawal	Number of Years Without Withdrawal
0	0
1	2
2	6
3	10
4+	14

D. Valuation Data

The RCA pension benefits in payment were provided as at 31 March 2001. RCA benefits expected to be paid in respect of contributors and accrued spousal allowances of current retired members were all derived from the membership data described in Appendix 5 and shown in Appendix 11.

Appendix 9 - Solvency Valuation Methodology and Assumptions

A. Valuation of Assets

For the Superannuation Account, a market-related asset value was calculated by discounting future cash flows using 31 March 2002 yields on Government of Canada bonds of corresponding durations. For the Pension Fund, the market value of the assets as at 31 March 2002 was used. For the RCA Account, the book value of the assets was used. Member contributions being made in respect of prior service and leave without pay elections were valued as if they were immediate annuities.

B. Valuation of Liabilities

All members were assumed to be vested in respect of their accrued benefits. The members eligible for an immediate annuity or an annual allowance were assumed to retire immediately. The remaining members were assumed to terminate employment and elect to transfer the commuted value of a deferred annuity out of the plan. RCA benefits still being accrued for former Deputy Heads were valued with the same methodology as going-concern, as these benefits were assumed contractual.

The solvency liability was calculated as the actuarial value of the estimated accrued benefits as at 31 March 2002 on the basis of the actuarial assumptions described in section C.

The computation of the commuted value of the deferred annuities was based on the interest basis specified in the Recommendation for the Computation of Transfer Values from Registered Pension Plans of the Canadian Institute of Actuaries. The actuarial value of all immediate annuities and annual allowances, including pensions already in payment, was the estimated cost of purchasing the appropriate life annuities.

C. Assumptions

The following table summarizes the actuarial assumptions used for solvency valuation purposes.

Table 19 Solvency Actuarial Assumptions

	Interest rates, net of inflation
Commuted value of deferred annuities	PSSA: 4.00% first 15 years; 3.25% thereafter RCA: 0.75% first 15 years; 0.125% thereafter
Immediate annuities, annual allowances, and deferred annuities	PSSA: 3.75% first 15 years; 3.00% thereafter RCA: 0.625% first 15 years; 0.00% thereafter
Final average earnings	Calculated using valuation pensionable earnings, actual rates of increase in earnings and assumed seniority and promotional salary increases
Mortality	Same as for going-concern valuation
Family composition	Same as for going-concern valuation
Termination expenses	$93 million in aggregate for the Superannuation Account, Pension Fund and RCA Account

Appendix 10 - Superannuation Account Projection

Until 31 March 2000 the PSSA was entirely financed through the PS Superannuation Account. The Account is now charged only with benefit payments made in respect of service earned before 1 April 2000 and administrative expenses; it is credited with prior service and leave without pay contributions made for elections made prior to 1 April 2000 and interest earnings. The legislation allows maintaining an actuarial surplus equal to 10% of the liabilities at the end of the period.

The results of the following projection were computed using the assets described in Appendix 4, the data described in Appendix 5, the methodology described in Appendix 6, and the assumptions described in Appendix 7.

The projection shows the expected development of the Superannuation Account actuarial surplus if all assumptions are realized. Emerging experience, differing from the corresponding assumptions, will result in gains or losses to be revealed in subsequent reports.

Table 20 Superannuation Account Projection
($ millions)

Plan Year	Beginning Account Balance	Beginning Liabilities	Beginning Actuarial Surplus	Actuarial Surplus Reduction	Payments	Investment Earnings
2003	81,039	71,946	9,094	-	5,645	6,602
2004	81,996	72,277	9,719	2,529	4,482	6,621
2005	81,606	74,187	7,419	421	4,037	6,418
2006	83,566	75,969	7,597	432	4,157	6,366
2007	85,342	77,584	7,758	448	4,285	6,327
2008	86,936	79,032	7,903	460	4,422	6,285
2009	88,339	80,308	8,031	475	4,560	6,207
2010	89,511	81,374	8,137	488	4,701	6,116
2011	90,438	82,217	8,222	500	4,837	5,996
2012	91,098	82,816	8,282	515	4,964	5,689
2017	89,393	81,266	8,127	567	5,489	4,872
2022	81,657	74,233	7,423	589	5,718	4,303

Appendix 11 - Detailed Information on Membership Data

Table 21 Male Contributors

Number and Average Annual Pensionable Earnings[1] as at 31 March 2001

Age Last Birthday	Completed Years of Service 0-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	All Years of Service
0-24	2,202	10							2,212
	$38,303	$44,384							$38,330
25-29	6,434	491	12						6,937
	$43,592	$47,745	$54,629						$43,905
30-34	5,726	3,191	1,341	28					10,286
	$46,482	$52,003	$51,236	$54,711					$48,837
35-39	4,783	3,402	5,182	1,846	148				15,361
	$48,276	$53,405	$54,248	$53,501	$50,334				$52,074
40-44	3,702	2,442	4,505	5,491	3,374	306			19,820
	$49,064	$53,384	$55,413	$58,680	$53,441	$52,900			$54,508
45-49	2,682	1,737	3,085	4,342	6,260	5,001	204		23,311
	$50,225	$53,452	$55,374	$60,816	$59,799	$57,932	$57,784		$57,410
50-54	1,867	1,306	2,121	2,675	3,914	7,576	2,804	138	22,401
	$50,937	$54,318	$56,192	$59,080	$61,355	$65,917	$62,159	$58,749	$60,943
55-59	968	686	1,276	1,300	1,498	2,577	1,625	235	10,165
	$52,968	$55,320	$55,174	$58,060	$62,639	$70,736	$74,352	$66,096	$63,707
60-64	363	271	493	503	461	608	426	152	3,277
	$54,175	$54,930	$55,519	$59,739	$59,925	$71,022	$78,705	$76,793	$63,466
65+	92	58	98	90	90	89	68	50	635
	$61,277	$59,047	$57,813	$58,759	$62,273	$75,054	$77,781	$81,229	$65,592
All ages combined	28,819	13,594	18,113	16,275	15,745	16,157	5,127	575	114,405
	$46,840	$53,106	$54,854	$58,705	$59,023	$64,210	$67,431	$68,476	$55,703

Average age last birthday: 44.2 years
Average pensionable service last anniversary: 14.0 years

Total PBDA[2] indexed reduction to basic annuity: $9,917,714
Total PBDA[2] indexed reduction adjustment: $2,230,956
Annualized pensionable payroll[3]: $6,333,328,015

1 As defined in Note 1 in Section D of Appendix 2.
2 PBDA means the *Pension Benefits Division Act.*
3 The aggregate pensionable earnings of all contributors with less than 35 years of pensionable service.

Table 22 Female Contributors
Number and Average Annual Pensionable Earnings [1] as at 31 March 2001

Age Last Birthday	Completed Years of Service 0-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	All Years of Service
0-24	3,344	4							3,348
	$37,292	$45,218							$37,302
25-29	8,920	922	41						9,883
	$41,832	$45,192	$40,594						$42,141
30-34	7,392	4,128	2,640	68					14,228
	$43,499	$48,415	$45,964	$44,986					$45,390
35-39	6,230	3,923	6,301	3,436	498				20,386
	$42,523	$48,373	$49,427	$47,719	$45,228				$46,724
40-44	5,654	3,298	4,922	5,586	5,062	892			25,414
	$41,543	$46,626	$49,021	$52,166	$47,507	$47,636			$47,388
45-49	4,193	2,637	3,922	3,822	4,679	5,116	417		24,786
	$41,874	$45,854	$47,078	$51,318	$52,157	$51,088	$48,810		$48,537
50-54	2,512	1,847	2,922	2,811	2,642	3,451	1,765	189	18,139
	$41,722	$44,423	$45,846	$48,473	$50,301	$55,880	$51,295	$51,400	$48,683
55-59	903	752	1,379	1,393	1,196	881	374	102	6,980
	$42,283	$43,494	$43,631	$46,523	$47,080	$52,338	$56,926	$49,062	$46,501
60-64	303	241	422	376	328	244	84	34	2,032
	$39,982	$41,450	$42,460	$43,998	$45,582	$51,632	$52,979	$45,191	$44,341
65+	54	52	55	56	56	40	20	6	343
	$39,437	$45,926	$40,930	$44,238	$44,552	$46,915	$55,719	$40,670	$44,209
All ages combined	39,505	17,804	22,604	17,548	14,459	10,628	2,660	331	125,539
	$41,818	$46,804	$47,543	$49,843	$49,354	$52,453	$51,783	$49,847	$46,678

Average age last birthday: 42.0 years
Average pensionable service last anniversary: 11.5 years

Total PBDA[2] indexed reduction to basic annuity: $988,161
Total PBDA[2] indexed reduction adjustment: $290,055
Annualized pensionable payroll[3]: $5,843,410,085

[1] As defined in Note 1 in Section D of Appendix 2.
[2] PBDA means the *Pension Benefits Division Act.*
[3] The aggregate pensionable earnings of all contributors with less than 35 years of pensionable service.

Table 23 Male Retirement Pensioners

Number and Average Annual Pension[1] as at 31 March 2001

	Registered Plan			RCA	
Age Last Birthday	Number	Average Pension[1]	Average Spouse Allowance[2]	Average Pension[1]	Average Spouse Allowance[2]
25-29	11	$ 1,746	$ 1,307	$0	$0
30-34	87	2,685	1,924	0	0
35-39	169	4,370	3,016	7	8
40-44	330	7,169	4,877	0	4
45-49	736	10,897	7,237	1	21
50-54	4,818	13,632	11,387	3,745	830
55-59	13,456	18,641	13,755	2,085	402
60-64	16,690	21,194	13,942	99	110
65-69	18,437	20,347	12,890	6	41
70-74	16,694	19,462	12,015	1	11
75-79	17,142	19,751	11,677	0	1
80-84	11,077	19,013	10,797	0	0
85-89	4,277	18,346	10,070	0	0
90-94	1,040	17,129	9,098	0	0
95-99	152	15,717	8,093	0	0
100-104	5	13,573	6,819	0	0
105-109	1	12,654	6,327	0	0
All Ages	105,122	$19,307	$12,349	$456	$116

Average age last birthday at 31 March 2001: 69.0 years
Average age last birthday at retirement: 58.5 years

Total annual pensions payable as at 31 March 2001 from:
PS Superannuation Account: $2,176.2 million
PS Pension Fund: $1.6 million
RCA Account: $47.9 million

1 The average amounts of pension:
- are annualized;
- include accrued indexation (even if not due) to 1 January 2001;
- include deferred annuities to age 60; and
- include annual allowance adjustments, PBDA reductions and CPP/QPP offsets whether or not they are in effect at valuation date.

2 The average amounts of spouse allowance:
- are annualized;
- include accrued indexation (even if not due) to 1 January 2001; and
- are still contingent on there being an eligible spouse.

Table 24 Female Retirement Pensioners
Number and Average Annual Pension[1] as at 31 March 2001

	Registered Plan			RCA	
Age Last Birthday	Number	Average Pension[1]	Average Spouse Allowance[2]	Average Pension[1]	Average Spouse Allowance[2]
25-29	21	$ 1,196	$ 916	$0	$0
30-34	103	2,593	1,899	0	7
35-39	207	4,506	3,208	0	5
40-44	394	6,016	4,264	0	4
45-49	681	8,535	5,942	3	17
50-54	3,183	8,202	7,867	3,153	880
55-59	6,774	9,739	8,443	2,199	565
60-64	7,994	10,946	8,148	87	187
65-69	8,247	10,504	7,497	0	75
70-74	7,286	10,336	7,127	0	19
75-79	7,382	10,399	6,822	0	2
80-84	4,884	10,277	6,296	0	0
85-89	2,630	10,469	6,009	0	0
90-94	956	9,878	5,382	0	0
95-99	193	8,213	4,260	0	0
100-104	29	6,534	3,291	0	0
105-109	2	9,177	4,589	0	0
ALL AGES	50,966	$10,137	$7,274	$503	$175

Average age last birthday at 31 March 2001: 68.4 years
Average age last birthday at retirement: 58.6 years

Total annual pensions payable as at 31 March 2001 from:
PS Superannuation Account: $572.3 million
PS Pension Fund: $0.9 million
RCA Account: $25.6 million

[1] The average amounts of pension:
- are annualized;
- include accrued indexation (even if not due) to 1 January 2001;
- include deferred annuities to age 60; and
- include annual allowance adjustments, PBDA reductions and CPP/QPP offsets whether or not they are in effect at valuation date.

[2] The average amounts of spouse allowance:
- are annualized;
- include accrued indexation (even if not due) to 1 January 2001; and
- are still contingent on there being an eligible spouse.

Table 25 Male Disability Pensioners

Number and Average Annual Pension[1] as at 31 March 2001

	Registered Plan			RCA	
Age Last Birthday	Number	Average Pension[1]	Average Spouse Allowance[2]	Average Pension[1]	Average Spouse Allowance[2]
30-34	$5	$3,550	$2,455	$0	$0
35-39	40	5,257	3,649	0	240
40-44	161	6,411	4,554	0	193
45-49	417	8,873	6,362	0	156
50-54	824	11,360	7,947	1	156
55-59	946	12,108	8,389	0	132
60-64	1,170	12,384	8,356	0	97
65-69	1,111	12,058	7,968	0	44
70-74	953	11,342	7,200	0	8
75-79	826	12,134	7,095	0	0
80-84	453	11,933	6,705	0	0
85-89	97	11,868	6,327	0	0
90-94	12	9,276	4,739	0	0
95-99	1	17,944	8,972	0	0
ALL AGES	7,016	$11,570	$7,568	$0	$51

Average age last birthday at 31 March 2001: 64.2 years
Average age last birthday at disability: 50.9 years

Total annual pensions payable as at 31 March 2001 from:
PS Superannuation Account: $84.5 million
PS Pension Fund: $0.1 million
RCA Account: $0.0 million

[1] The average amounts of pension:
- are annualized;
- include accrued indexation (even if not due) to 1 January 2001;
- include PBDA reductions, and CPP/QPP offsets whether or not they are in effect at valuation date.

[2] The average amounts of spouse allowance:
- are annualized;
- include accrued indexation (even if not due) to 1 January 2001; and
- are still contingent on there being an eligible spouse.

Table 26 Female Disability Pensioners
Number and Average Annual Pension[1] as at 31 March 2001

	Registered Plan			RCA	
Age Last Birthday	Number	Average Pension[1]	Average Spouse Allowance[2]	Average Pension[1]	Average Spouse Allowance[2]
25-29	1	$ 2,760	$ 1.911	$0	$212
30-34	9	3,190	2,208	0	209
35-39	75	4,978	3,519	0	205
40-44	287	6,525	4,637	0	178
45-49	555	7,990	5,677	0	149
50-54	776	8,803	6,244	0	148
55-59	756	8,569	6,049	0	115
60-64	880	8,386	5,936	0	67
65-69	724	7,722	5,395	0	9
70-74	525	7,776	5,169	0	0
75-79	446	8,298	5,021	0	0
80-84	279	8,093	4,663	0	0
85-89	139	7,801	4,244	0	0
90-94	32	11,392	5,793	0	0
95-99	7	11,419	5,711	0	0
100-104	1	10,512	5,256	0	0
ALL AGES	5,492	$8,116	$5,534	$0	$76

Average age last birthday at 31 March 2001: 61.6 years
Average age last birthday at disability: 49.5 years

Total annual pensions payable as at 31 March 2001 from:
PS Superannuation Account: $46.7 million
PS Pension Fund: $0.1 million
RCA Account: $0.0 million

[1] The average amounts of pension:
- are annualized;
- include accrued indexation (even if not due) to 1 January 2001;
- include PBDA reductions, and CPP/QPP offsets whether or not they are in effect at valuation date.

[2] The average amounts of spouse allowance:
- are annualized;
- include accrued indexation (even if not due) to 1 January 2001; and
- are still contingent on there being an eligible spouse.

Table 27 Surviving Spouses

Number and Average Annual Allowance as at 31 March 2001

Age Last Birthday	Number		Average Allowance[1]	
	Male	Female	Registered	RCA
20-24	0	1	$1,608	$0
25-29	0	9	7,984	238
30-34	7	17	4,385	0
35-39	31	103	5,118	5
40-44	83	338	6,198	25
45-49	135	681	7,325	26
50-54	235	1,185	8,513	35
55-59	255	1,691	8,942	25
60-64	321	2,747	9,353	14
65-69	408	4,597	9,117	5
70-74	495	7,984	8,894	1
75-79	531	11,877	8,844	0
80-84	392	10,093	8,467	0
85-89	160	5,923	8,166	0
90-94	39	2,322	7,355	0
95-99	7	620	6,159	0
100-104	0	112	6,417	0
105+	0	16	9,248	0
ALL AGES	3,099	50,316	$8,592	$4

Male average age last birthday at 31 March 2001: 68.4
Female average age last birthday at 31 March 2001: 75.7

Total annual allowances payable as at 31 March 2001 from:
PS Superannuation Account: $458.9 million
PS Pension Fund: $0.1 million
RCA Account: $0.2 million

[1] The average annual allowance includes accrued indexation to 1 January 2001.

Appendix 12 - Detailed Demographic Assumptions

Table 28 Assumed Seniority and Promotional Salary Increases

Service[1]	Male (%)	Female (%)
0	6.00	6.00
1	5.20	5.20
2	4.50	4.50
3	3.90	3.90
4	3.50	3.50
5	3.20	3.20
6	2.90	2.90
7	2.65	2.70
8	2.40	2.50
9	2.15	2.30
10	1.95	2.10
11	1.80	2.00
12	1.65	1.90
13	1.50	1.80
14	1.45	1.70
15	1.40	1.65
16	1.35	1.60
17	1.30	1.55
18	1.25	1.50
19	1.20	1.45
20	1.15	1.40
21	1.10	1.35
22	1.05	1.30
23	1.00	1.25
24	0.95	1.20
25	0.90	1.15
26	0.90	1.10
27	0.90	1.05
28	0.90	1.05
29	0.90	1.05
30+	0.90	1.05

[1] Expressed in completed years calculated as at the beginning of the plan year.

Table 29 Assumed Rates of Withdrawal Prior to Age 50[1]
(per 1,000 individuals)

	Main Group		Operational Service Group[2]
Service[3]	Male	Female	Male & Female
0	207	230	81
1	122	125	47
2	95	90	36
3	80	72	29
4	67	62	25
5	56	54	21
6	47	47	18
7	41	41	16
8	37	37	14
9	33	33	12
10	29	29	10
11	26	26	9
12-18	19	22	7
19+	19	22	8

[1] Rates at duration 0 also apply at ages 50+.
[2] Comprises Air Traffic Controllers and Correctional Service Canada members in operational service.
[3] Expressed in completed years calculated at the beginning of the plan year.

Table 30 Assumed Rates of Pensionable Retirement - Main Group

(per 1,000 individuals)

Male Members

	Years of Service[1]												
Age Last Birthday[1]	1-3	4-8	9-13	14-18	19-23	24-28	29	30	31	32	33	34	35+
49	90	40	30	20	20	20	30	40	40	50	50	90	70
50	90	40	30	20	20	20	40	40	40	50	60	110	70
51	90	40	30	20	20	30	50	50	50	60	70	130	90
52	90	40	30	20	20	30	60	60	60	70	100	150	150
53	90	40	30	20	20	40	80	90	90	90	120	190	190
54	90	40	30	20	20	40	250	250	260	300	330	590	540
55	110	60	30	30	20	40	230	230	240	260	290	540	450
56	110	60	30	30	30	40	230	230	230	250	290	500	400
57	140	80	40	30	30	40	230	230	230	250	290	500	400
58	140	80	40	40	40	40	230	230	230	250	290	500	400
59	190	190	190	190	190	290	380	380	380	330	320	550	450
60	190	190	190	190	190	260	310	310	310	290	290	500	400
61	170	170	170	170	190	240	280	280	280	280	280	400	400
62	190	190	190	190	220	250	290	310	330	330	330	500	400
63	210	210	210	210	230	270	320	320	320	320	320	500	400
64	470	470	470	470	570	570	570	570	610	610	610	650	550
65	360	360	360	360	410	410	450	450	450	450	450	600	450
66	360	360	360	360	360	360	450	450	450	450	450	600	450
67	360	360	360	360	360	360	450	450	450	450	450	600	450
68	360	360	360	360	360	360	450	450	450	450	450	600	450
69	360	360	360	360	360	360	450	450	450	450	450	600	450

Female Members

	Years of Service												
Age Last Birthday[1]	1-3	4-8	9-13	14-18	19-23	24-28	29	30	31	32	33	34	35+
49	90	40	30	30	30	40	50	60	60	60	60	90	70
50	100	40	30	30	30	40	50	60	60	70	70	100	80
51	100	40	30	30	30	40	50	60	60	70	70	110	90
52	100	40	30	30	30	40	60	70	70	70	70	120	100
53	110	40	30	30	30	50	70	70	70	80	80	170	130
54	110	40	30	30	30	50	270	270	270	270	270	570	470
55	120	50	40	40	50	60	260	260	260	260	210	480	350
56	120	50	40	40	50	70	250	250	250	250	220	480	350
57	130	50	40	40	50	70	230	230	230	230	230	480	350
58	130	50	50	50	50	90	290	290	290	290	240	480	350
59	130	130	180	220	260	320	350	350	350	350	270	600	350
60	140	140	180	220	260	300	300	300	300	300	300	550	350
61	140	140	180	220	260	300	300	300	300	300	300	550	350
62	140	140	180	220	260	300	300	300	300	300	300	550	320
63	140	140	180	230	260	300	300	300	300	300	300	550	320
64	450	450	550	550	550	550	550	550	550	650	650	650	500
65	370	370	370	370	370	370	450	450	450	450	450	550	450
66	270	270	320	320	320	320	320	370	370	370	370	550	400
67	270	270	320	320	320	320	320	370	370	370	370	550	400
68	270	270	320	320	320	320	320	370	370	370	370	550	400
69	270	270	320	320	320	320	320	370	370	370	370	550	400

[1] Expressed in completed years calculated at the beginning of the plan year.

Table 31 Assumed Rates of Pensionable Retirement – Operational Service Group[1]
(per 1,000 individuals)

Age Last Birthday[2]	Years of Service[2]												
	1-3	4-8	9-13	14-18	19-23	24-28	29	30	31	32	33	34	35+
49	30	13	8	6	6	70	90	90	90	90	90	190	170
50	30	13	8	6	6	70	90	90	90	90	90	190	170
51	30	13	8	6	8	70	90	90	90	90	90	190	170
52	30	13	8	6	8	80	120	120	120	120	120	190	170
53	30	13	8	6	11	100	150	150	150	150	150	255	185
54	40	20	10	10	19	125	240	240	240	240	240	650	550
55	45	30	10	13	23	131	288	288	288	288	288	650	550
56	45	30	15	13	23	144	288	288	288	288	288	650	550
57	55	40	20	13	26	153	288	288	288	288	288	650	550
58	55	40	20	18	26	167	288	288	288	288	288	650	550
59	190	190	210	210	210	310	410	410	410	370	350	600	500
60	190	190	210	210	210	310	350	350	370	340	320	550	450
61	180	180	180	180	220	280	310	310	310	310	310	500	410
62	200	200	200	200	240	280	340	340	380	380	380	500	410
63	250	250	250	250	270	310	350	350	370	370	370	600	480
64	500	500	500	500	600	600	600	600	650	650	650	700	600
65	400	400	400	400	450	450	500	500	500	500	500	650	480
66	400	400	400	400	400	400	500	500	500	500	500	650	480
67	400	400	400	400	400	400	500	500	500	500	500	650	480
68	400	400	400	400	400	400	500	500	500	500	500	650	480
69	400	400	400	400	400	400	500	500	500	500	500	650	480

1 Comprises all CSC and ATC members in operational service, both male and female.
2 Expressed in completed years calculated at the beginning of the plan year.

Table 32 Assumed Rates[1] of Pensionable Disability
(per 1,000 individuals)

Age Last Birthday	Male	Female
to 25	0.3	0.1
26	0.3	0.2
27	0.3	0.2
28	0.3	0.3
29	0.3	0.3
30	0.3	0.4
31	0.3	0.5
32	0.3	0.5
33	0.3	0.6
34	0.4	0.7
35	0.5	0.9
36	0.7	1.0
37	0.9	1.2
38	1.0	1.4
39	1.1	1.5
40	1.2	1.7
41	1.3	1.8
42	1.4	2.0
43	1.5	2.1
44	1.7	2.4
45	1.9	2.6
46	2.0	2.9
47	2.1	3.2
48	2.6	3.7
49	3.0	4.1
50	3.4	4.5
51	3.8	5.0
52	4.3	5.5
53	4.7	6.1
54	5.1	6.8
55	5.7	7.6
56	6.4	8.4
57	7.2	9.3
58	8.1	10.2

[1] Rates applicable at ages 55 and over only if service is less than 30 years.

Table 33 Assumed Mortality Rates for 2003 Plan Year
(per 1,000 people)

Age Last Birthday	Members and Retirement Pensioners		Disability Pensioners		Surviving Spouses	
	Male	Female	Male	Female	Male	Female
20	0.4	0.2	3.0	6.2	0.9	0.3
25	0.5	0.3	5.9	6.8	1.0	0.4
30	0.7	0.4	9.0	7.4	1.1	0.5
35	0.9	0.4	12.2	7.8	1.5	0.7
40	1.2	0.6	14.9	8.3	1.7	0.9
45	1.5	1.1	17.3	9.0	2.4	1.4
50	2.2	1.6	19.5	10.4	3.6	2.3
55	3.6	2.4	21.7	12.7	6.1	3.9
60	7.6	4.7	26.3	15.8	10.7	6.4
65	14.4	8.5	36.1	20.6	17.4	10.3
70	24.6	14.1	52.8	28.2	27.2	15.8
75	41.5	23.2	71.1	41.1	44.2	25.9
80	69.6	42.7	96.0	64.8	72.7	44.9
85	109.8	77.8	136.9	112.4	115.8	77.1
90	169.4	128.2	207.9	178.4	175.8	130.6
95	253.0	193.2	315.5	281.3	255.2	208.5
100	352.1	316.0	474.8	440.6	352.7	316.2
105	500.0	500.0	500.0	500.0	500.0	500.0
110	500.0	500.0	500.0	500.0	500.0	500.0
115	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0

Table 34 Assumed Longevity Improvement[1] Factors
(annual % mortality reductions)

Age Last Birthday	Male 2000	Male 2025+	Female 2000	Female 2025+
20	3.00	0.50	2.00	0.50
25	2.50	0.50	1.75	0.50
30	1.50	0.50	1.25	0.50
35	0.75	0.50	1.25	0.50
40	1.00	0.50	1.25	0.50
45	1.75	0.50	1.75	0.50
50	2.50	0.50	2.00	0.50
55	2.75	0.50	1.75	0.50
60	2.75	0.50	1.50	0.50
65	2.50	0.50	1.50	0.50
70	2.00	0.50	1.50	0.50
75	1.50	0.50	1.25	0.50
80	1.25	0.50	1.00	0.50
85	0.75	0.50	0.75	0.50
90	0.50	0.50	0.50	0.50
95	0.25	0.25	0.25	0.25
100	0.25	0.25	0.25	0.25
105+	0.00	0.00	0.00	0.00

[1] Mortality improvement is based on a 25-year select period with an ultimate annual mortality improvement of 0.5% at all ages. During the select period, the annual moratlity reduction is linearly interpolated between the figures ofr 2000 and 2025.

Table 35 Assumptions for Survivor Allowances to Spouses
(per 1,000 member deaths)

Age Last Birthday at Death	Number of Eligible Surviving Spouses		Average Age Last Birthday of Surviving Spouse	
	Widows	Widowers	Widow	Widower
25	340	565	24	26
30	429	565	29	31
35	483	565	34	37
40	569	565	39	43
45	665	565	43	47
50	742	565	47	53
55	785	565	52	58
60	799	515	57	63
65	793	467	63	67
70	767	401	67	70
75	716	317	71	76
80	642	222	75	79
85	534	128	79	82
90	396	56	83	86
95	248	18	88	89
100	97	1	92	94
105	6	0	96	-
109	6	0	100	-
110	0	0	-	-

Table 36 Assumptions for Survivor Allowances to Children
(per 1,000 member deaths)

Age Last Birthday at Death	Number of Children		Average Age of Children	
	Male Members	Female Members	Male Members	Female Members
25	271	438	2	1
30	670	702	5	5
35	925	794	8	10
40	1,020	726	11	13
45	927	538	14	16
50	665	311	16	17
55	358	129	17	18
60	136	28	18	19
65	36	0	19	21
70	11	0	21	23
75	6	0	23	-
80	0	0	-	-

Appendix 13 – Acknowledgements

The Comptrollership Branch of the Treasury Board Secretariat provided a certification of the assets of the plan as at 31 March 2002.

The Superannuation Directorate of the Department of Public Works and Government Services Canada provided the data on plan members.

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